

Bureau of Air Quality

South Carolina Department of Health and Environmental Control

State of South Carolina: Network Description and Ambient Air Network Monitoring Plan

Calendar Year 2010



South Carolina Department of Health
and Environmental Control

DRAFT

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CERTIFICATION

This document contains the planned changes and final description of the sites and monitors of the South Carolina Ambient Air Monitoring Network for criteria pollutants and related parameters for calendar year 2010. The South Carolina Department of Health and Environmental Control (DHEC) certifies that the network described herein meets or exceeds the minimum requirements needed to support the State Implementation Plan, national air quality assessments and policy decisions as required in 40 CFR Part 58, Ambient Air Quality Surveillance, at the time of submittal to the United States Environmental Protection Agency (EPA), Region 4. Due to circumstances that may arise during the implementation of the plan in 2009 and during the 2010 monitoring year, some elements of the network may require modification. A notification of modifications will be posted on the DHEC website and provided to EPA Region 4. Where necessary, a request for approval of deviations from this plan and supporting documentation will be submitted to EPA Region 4.

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Acronyms

AQCR – Air Quality Control Region
AQI – Air Quality Index
AQS – Air Quality System
BAQ – Bureau of Air Quality
BC – Black Carbon
CAAA – Clean Air Act Amendment
CBSA – Core-Based Statistical Area
CFR – Code of Federal Regulation
CSA – Combined Statistical Area
DAQA – Division of Air Quality Analysis
EPA – Environmental Protection Agency
FDMS – Filter Dynamics Measurement System
FEM – Federal Equivalent Method
FRM – Federal Reference Method
GC/MS – Gas Chromatography / Mass Spectroscopy
HPLC – High Performance Liquid Chromatography
IC – Ion Chromatography
ICP – Inductively Coupled Plasma
IMPROVE – Interagency Monitoring of Protected Visual Environments
ICP/MS – Inductively Coupled Plasma Mass Spectroscopy
LAC – Light-Absorbing Carbon
MET - Meteorology
MSA – Metropolitan Statistical Area
mSA – Micropolitan Statistical Area
NAAQS – National Ambient Air Quality Standards
NATTS- National Air Toxics Trends Site
NADP-MDN – National Atmospheric Deposition Program Mercury Deposition Network
NATA – National Air Toxics Assessment
NCore – National Core Monitoring Network
NPAP – National Performance Audit Program
NWS – National Weather Service
PEP – Performance Evaluation Program
PSD – Prevention of Significant Deterioration
PTFE - Polytetrafluoroethylene

PUF – Polyurethane Foam
QA – Quality Assurance
QAPP – Quality Assurance Project Plan
QC – Quality Control
SAMWG – Standing Air Monitoring Working Group
DHEC – South Carolina Department of Health and Environmental Control
SLAMS – State and Local Air Monitoring Station
SPM – Special Purpose Monitor
STN – Speciation Trends Network
TBD - To be determined
TEOM – Tapered Element Oscillating Microbalance
TOT – Thermal Optical Transmittance
TSP – Total Suspended Particulate
US EPA – US Environmental Protection Agency
UV – Ultraviolet
WGS84 – World Geodetic System of 1984 revised in 2004
XRF – X-ray Fluorescence Spectroscopy

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Cover Photo: Due West monitoring site located in Abbeville County, SC

Introduction

The South Carolina Department of Health and Environmental Control (Department) or its predecessors have operated an air quality monitoring network in South Carolina since 1959. Since that time, the network has continually evolved to meet the requirements and needs of the Department's Air Program. In 2010 the network will comprise of 109 monitors and samplers at 38 sites.

In October, 2006, the United States Environmental Protection Agency (EPA) published revisions to the ambient monitoring regulations (71 FR 61236, October 17, 2006) requiring quality assurance, monitor designations, minimum requirements for both number and distribution of monitors among metropolitan statistical areas (MSAs), and probe siting changes. The regulation also included the requirement for an annual monitoring network plan and periodic network assessments.

Monitor designations include the State and Local Air Monitoring Station (SLAMS), special purpose monitoring (SPM) and the National Core Monitoring Network (NCore). The SLAMS air monitoring network is specific for the criteria pollutants, those pollutants for which National Ambient Air Quality Standards (NAAQS) have been established. In addition to a SLAMS network, the air monitoring network includes SPM for air toxics, particulate, mercury, criteria pollutants, precipitation and meteorology.

This plan covers the eighteen month period from July 1, 2009 through December 31, 2010. This period includes a 6 month implementation period during which sites indicated as 'new' will be identified, secured and prepared for the installation of monitoring equipment. It is expected that any monitoring indicated as 'New' or 'to be established' will be installed, calibrated and operating in 2010 with the exception of some Ozone monitors which may begin operation at the start of the South Carolina Ozone Monitoring Season (April-October). Stakeholder groups have committed to assist in identifying and securing access to suitable locations. These efforts will continue in this and in subsequent monitoring plans as the

Department continues to identify new monitoring needs.

The annual monitoring network plan, as required and described in 40 CFR Part 58.10, Annual Monitoring Network Plan and Periodic Network Assessment, must contain the following information for each monitoring station in the network:

- The Air Quality System (AQS) site identification number for existing stations.
- The location, including street address and geographical coordinates, for each monitoring station.
- The sampling and analysis method used for each measured parameter.
- The operating schedule for each monitor.
- Any proposal to remove or relocate a monitoring station within a period of eighteen months following the plan submittal.
- The monitoring objective and spatial scale of representativeness for each monitor.
- The identification of any sites that are suitable for comparison against the PM_{2.5} NAAQS.
- The Metropolitan Statistical Area (MSA), Core-Based Statistical Area (CBSA), Combined Statistical Area (CSA) or other area represented by the monitor.

This document constitutes the South Carolina Air Monitoring Network Plan and is organized into two main parts:

Network Summaries: Presenting the total number of sites and monitors for the State. Also included is a listing of all proposed changes to the current network.

Air Monitoring Station Description: An outline of the designations, parameters, monitoring methods, and the purpose for each monitor at the site.

The South Carolina Ambient Monitoring Network will be reviewed annually. Planned changes will be described in this plan (and its annual revisions) and provided for public review

and comment prior to submission to the EPA Region 4 Administrator.

Recent Regulatory Developments

NCore

The NCore network is designed to track long term trends for accountability of emissions control programs and health assessments that contribute to ongoing reviews of the NAAQS and support development of emissions control strategies through air quality model evaluation and other observations. The NCore network is required to measure ozone (O₃), carbon monoxide (CO), sulfur dioxide (SO₂), total reactive nitrogen, particulate matter 2.5 (PM_{2.5}) (both continuous and Federal Reference Method), PM_{2.5} chemical speciation; coarse particulate matter (PM_{10-2.5}) (with a continuous Federal Equivalent Method); including temperature, wind speed, wind direction, and relative humidity.

The required plan for establishing the proposed South Carolina NCore site is included as an appendix to this plan. The NCore site must be approved by the EPA Office of Air Quality Planning and Standards – Air Quality Assessment Division.

Lead

The National Ambient Air Quality Standard for lead was revised by the EPA on November 12, 2008. The primary standard, measured as total suspended particles (TSP), has been changed from 1.5 micrograms per cubic meter (µg/m³) to 0.15 µg/m³ and the secondary standard is revised to be identical in all respects to the primary standard. Lead concentrations are determined from the analysis of total suspended particulate collected using high volume particulate samplers as described in 40 CFR §50 Appendix G. Particulate samples are acid extracted to dissolve the metals.

There are also two new monitoring requirements: monitoring for lead sources that may contribute to violations of the lead NAAQS (“source-oriented monitoring”), and monitoring in large urban areas (“non-source-oriented monitoring”).

According to 40 CFR Part 58, Appendix D, paragraph 4.5(a), monitoring agencies are required to conduct ambient air lead monitoring considering lead sources that are expected to or have been shown to contribute to a maximum lead concentration in ambient air in excess of the NAAQS. At a minimum, there must be one source-oriented SLAMS site located to measure the maximum lead concentration in ambient air resulting from each lead source which emits 1.0 or more tons per year based on either the most recent National Emissions Inventory or other scientifically justifiable methods and data (such as improved emissions factors or site-specific data) taking into account logistics and the potential for population exposure, unless the EPA Regional Administrator grants a waiver. According to 40 CFR Part 58.10(a)(4), source-oriented lead monitors are required to begin sampling by January 1, 2010. Monitoring agencies are required to identify which sources of lead will be monitored and site locations in their annual monitoring plan required to be submitted to the EPA Regional Administrator by July 1, 2009. South Carolina has no sources emitting more than 1 tpy of lead. Therefore, no source-oriented sampling is required. A list of sources with updated emissions from the 2005 National Emissions Inventory (NEI) – version 2, is attached as Appendix A.

According to 40 CFR Part 58, Appendix D, paragraph 4.5(b), monitoring agencies are also required to conduct ambient air lead monitoring in each Core-Based Statistical Area (CBSA) with a population equal to or greater than 500,000 people as determined by the latest available census figures. South Carolina has three such CBSA’s which are the urbanized areas of Greenville, Columbia and Charleston counties. The planned lead monitor locations are the Greenville ESC site for Greenville, Bates House site for Columbia, and Jenkins Avenue Fire Station site for Charleston. According to 40 CFR Part 58.10(a)(4), non-source-oriented lead monitors are required to begin sampling by January 1, 2011. Although monitoring agencies are required to identify which CBSA will be monitored and site locations in their annual network plan required to be submitted to the EPA Regional Administrator by July 1, 2010,

the Department is identifying these required sites early and will begin sampling before the date required by regulation.

2010 Monitoring Network Plan: Public Participation Opportunities

In anticipation of the need for an updated monitoring plan, heightened public interest and potential impact of the monitoring regulation changes, the Air Program once again solicited involvement from both internal (to the Department) and external workgroups.

An external workgroup was convened with invited representatives of the business, environmental and health communities.

Other opportunities for public involvement include:

- A web page maintained for publication and access to draft and reference documents and announcements¹.
- Availability of the proposed **Ambient Monitoring Plan for public review and comment runs from May 22 to June 22, 2009**. All recorded participants who registered in the outreach and discussion activities were notified when the plan became available for review.
- Meetings and conference calls with the stakeholder groups throughout the process.

The Department is committed to continuing the involvement and participation opportunities in the development of the annual revisions of the Monitoring Plan and the periodic assessments of the air quality surveillance system.

Network Operation

The primary responsibility for the operation of the South Carolina Ambient Monitoring Network (Monitoring Network) is assigned to the Division of Air Quality Analysis in the Bureau of Environmental Services (Division). The Division establishes, maintains and operates the sites and instruments that make up the network and performs the analysis of samples collected as part of routine monitoring or special

projects. Data generated by the network for comparison to the National Ambient Air Quality Standards (NAAQS) is verified to be accurate and reported by the Division and stored in the national Air Quality System (AQS) database.

Criteria pollutant monitoring for the purpose of comparison to the NAAQS is performed using EPA designated Federal Reference Methods (FRM) or Federal Equivalent Methods (FEM) to ensure the precision and accuracy of the measurements across the air quality surveillance system.

Regular calibration and audits of the measurement systems are performed to verify that the instruments are operating correctly and data being collected is accurate. The quality assurance activities supporting the Monitoring Network meet or exceed the quality assurance requirements defined in 40 CFR Part 58 Appendix A (Quality Assurance Requirements for SLAMS, SPMs and PSD Air Monitoring).

Raw data is collected hourly from sites across the state and provided to internal data users (forecasters and data analysts) and to the AIRNow database for presentation to the public. Before the data is submitted to AQS it is verified to be accurate through review of the instrument Quality Control (QC) and Quality Assurance (QA) performance documentation.

Instrument QA/QC alone is not sufficient to assure monitoring data quality. For this reason, the Department, in addition to periodic site assessments, has begun conducting additional visits of monitoring sites with involvement of stakeholder groups to enable comparison with applicable siting criteria.

It is the Department's intent that all criteria pollutant monitors and samplers be sited and operated consistent with the requirements of 40 CFR Part 58 and Appendices A (Quality Assurance), C (Methods), D (Network Design) and E (Probe Siting Criteria) and the data collected by these samplers and monitors is suitable for comparison to the NAAQS. The Department further intends to assure that the samplers and monitors comply with as many of the recommendations contained within the

¹<http://www.scdhec.net/environment/baq/ambientairmonitoring.aspx>

regulations and applicable guidance documents as is possible.

An element of the Quality System² employed by the Division is periodic assessments of systems and monitor performance. As the primary quality assurance organization for ambient air monitoring activities, the Division operates under the approved Environmental Quality Control Quality Assurance Management Plan, the Ambient Air Quality Monitoring Quality Assurance Project Plan and approved plans for specific projects. EPA Region 4 provides periodic Technical Systems Audits of sampling and analytical methods, network operation, data collection and reporting and Quality Assurance activities at their discretion or at the request of the Department's Air Program. EPA Region 4 may conduct audits of any component of the operation of the network or quality management system. The Division also participates in the National Performance Audit Program (NPAP) and the Performance Evaluation Program (PEP) administered by EPA to provide independent audits of criteria pollutant monitoring and performance.

² The Quality System is the means by which the Department implements the quality management process through the Quality Assurance Management Plan for SC DHEC, July, 2008.

Station Description Content

Specific siting information for each site and monitor is stored in the EPA's AQS, the national ambient air database. The AQS Site Description includes the exact location of the site, local and regional population, and description of the site location, monitor types, and monitoring objectives. This site and monitor information is routinely updated whenever there is a change in site characteristics or pollutants monitored.

AQS is used as the primary repository for all South Carolina ambient monitoring data including site descriptions. All ambient monitoring data is stored in AQS, including non NAAQS parameters, ambient toxics, total suspended particulate and supporting quality assurance data.

Station Description

The network station descriptions contained in this document include the following information:

Site Description

The header for each site includes:

Site Name

The **Core Based Statistical Areas (CBSA)** as defined by the US Census. (November 2004).³

AQS Site ID: The unique site identification number used in AQS in the form:

45-0cc-ssss

Where:

45 is the state identification code for SC,
cc is the county identification code and
ssss is the site identification code within the county.

Location: Typically the street address of the site where available.

County: County in which the site is located.

Coordinates: Listed in decimal degrees, Latitude (N) then Longitude (W) using WGS84 projection.

Date Established: The date when each existing monitoring station was established is shown in the description. For new stations proposed in this plan, a date is provided when it is expected for the station to be in operation. Individual monitors at a site may have differing start and stop dates.

Date of most recent **Site Evaluation:** Each monitoring station in the network is periodically visited to determine whether all probe exposure criteria required for monitors are met. If necessary, corrective action is scheduled to correct deficiencies. If a monitoring site has not yet been evaluated, it will be denoted with the word "pending".

Monitor Details

In a table associated with each site the parameters monitored at that site are listed along with descriptive information associated with that parameter.

Parameter

Criteria (compounds for which a National Ambient Air Quality Standard has been established), non criteria and/or supporting parameters (primarily meteorological measurements) measured at the site are listed.

Scale

Each monitor or sampler in the monitoring network is described in terms of the approximate physical dimensions of the air parcel nearest the monitoring station throughout which pollutant concentrations are expected to be reasonably similar. This is most often referred to as the *Scale* of the monitor. Different pollutants monitored at the same location may represent different scales depending on the characteristics of the pollutant. Area dimensions or scales of representativeness used in the network description are:

(a) Microscale

Air volumes associated with area dimensions ranging from several meters up to about 100 meters.

(b) Middle scale

Areas up to several city blocks in size with dimensions ranging from about 100 meters to 0.5 kilometers.

³ The US Census Bureau periodically adjusts CBSA names and boundaries. This plan uses the latest available revision.

(c) Neighborhood scale

Extended areas of a city that has relatively uniform land use with dimensions ranging from 0.5 to 4.0 kilometers.

(d) Urban scale

Citywide or equivalent rural areas with dimensions ranging from 4 to 50 kilometers.

(e) Regional scale

Areas ranging from 50 to hundreds of kilometers in diameter.

The true representative area may best be described by an irregular shape of the approximate dimensions indicated above accounting for local sources and differing land use.

The representative scale of a monitor is closely associated with the objective of the monitoring.

Objective

The ambient monitoring network is designed to meet three primary objectives:

Provide air pollution data to the public in a timely manner. Near real-time data is made available on the internet through AIRNow and Air Quality Index (AQI) reporting and forecasting in the major metropolitan areas.

Support compliance with ambient air quality standards and emissions strategy development. Monitors are operated to measure concentrations for comparison to NAAQS and to provide information to aid the development of strategies to improve air quality.

Support air pollution research studies. Data from the monitoring networks support greater understanding of the impacts and effects of ambient air pollution.

Individual monitors within a monitoring network that support these basic objectives generally serve one or more of the following purposes:

- Determine highest concentrations of pollutants,
- Determine representative concentrations in areas of high population density,

- Determine impact on air quality of significant sources or source categories,
- Determine general background concentrations,
- Determine extent of regional pollutant transport, and
- Determine welfare-related impacts in more rural and remote areas (ex. visibility impairment and impacts to vegetation).

The design intent in siting stations is to correctly match the area represented by the sample of monitored air with the area dimensions most appropriate for the monitoring objective of the monitor. The relationship of appropriate scale to the six basic purposes are:

| Monitoring Purpose | Siting Scale |
|-------------------------|-------------------------------|
| Highest concentration | Micro, Middle, Neighborhood |
| Population | Neighborhood, Urban |
| Source impact | Micro, Middle, Neighborhood |
| General/background | Neighborhood, Urban, Regional |
| Regional transport | Urban, Regional |
| Welfare-related impacts | Urban, Regional |

Monitor and sampler data is regularly reviewed to assure the assigned scale is correct and appropriate for the intended objective.

Designation

Required and long term criteria pollutant monitors described in the air quality monitoring network are designated **State and Local Air Monitoring Stations (SLAMS)**.

SLAMS: EPA requirements for air quality surveillance systems provide for the establishment of a network of monitoring stations designated SLAMS that measure ambient concentrations of those pollutants for which standards have been established. These stations must meet requirements that relate to four major

areas: quality assurance, monitoring methodology, sampling interval and siting of instruments and instrument probes.

Monitoring at some locations meets Air Program needs beyond that necessary for compliance with minimum requirements. **Special Purpose Monitors (SPM)** are operated to meet specific Air Program needs and may be long term or part of special studies designed to answer specific questions.

SPM: Monitors in the air quality surveillance network not designated SLAMS are Special Purpose Monitors. Special Purpose Monitors support investigations addressing complaints, areas and pollutants of concern, network refinement, modeling verification and compliance. These monitors are committed to investigation and projects as described in the associated Quality Assurance Project Plan (QAPP). They may be located as separate monitoring stations or be included at existing monitoring locations. Monitoring data will be reported to AQS where possible. Siting and probe exposure will conform to all requirements for SLAMS monitors whenever possible.

Both SLAMS and SPM data may be used in the reporting of an area Air Pollutant Quality Index.

Air Quality Index (AQI): The AQI is a method of reporting that converts concentration levels of pollution to a simple number scale of 0-500. Index reporting is required for all urban areas with a population exceeding 350,000. Intervals on the AQI scale are related to potential health effects of the daily measured concentration of the measured pollutants. All stations in a metropolitan area provide data for daily index reporting. Data collected from continuous monitors for Ozone and PM_{2.5} monitors is collected hourly and reported as AQI maps on EPA's AIRNow website. A daily AQI is provided for the Greenville-Spartanburg, Columbia, and Charleston-North Charleston areas.

Probe Height

The monitor or sampler probe is the point where ambient air enters the analytical or sample collection system. Ideally, air would be sampled at approximately nose height, but due to operational, exposure and security considerations

air may be sampled further from ground level. Proper probe height is specified in the monitoring regulations (typically between 2 and 15 meters) and is checked as part of the periodic site evaluations.

Analysis Methods

All sampling and analytical procedures used for comparison of ambient concentrations of criteria pollutants to the NAAQS will use designated Federal Reference (FRM) or equivalent (FEM) methods. Where appropriate for specific monitoring objectives, well characterized non-equivalent methods may be used.

• Particulate Matter ≤ 10 microns (PM₁₀)

PM₁₀ samplers operated by the Department are designated as either FRM or FEM samplers and are operated according to the requirements set forth in 40 CFR Part 50 and 40 CFR Part 58. Intermittent samplers collect a 24-hr sample no less than every sixth day on a quartz filter. The filter is conditioned and weighed before and after the sample run. The gain in weight in relation to the volume of air sampled is calculated in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). The quartz filters are equilibrated before each weighing for a minimum of 24 hours at a 20-23°C mean temperature and a 30-40% mean relative humidity.

Continuous PM₁₀ samplers provide 24-hour concentration measurements every day. During sampling, ambient air passes through an inlet designed to pass only particles smaller than 10 microns in diameter. After exiting the inlet, the sample stream is sent through a mass transducer to determine instantaneous and total flow. Particulate in the sample stream passes through a Teflon-coated glass fiber filter. This filter is weighed every two seconds. The difference between the current filter weight and the previous weight gives the total mass of the collected particulate for that period. The mass concentration is computed by dividing the total mass gained by the flow rate. Data is stored locally on redundant data acquisition systems and recovered hourly by an automated central data acquisition system.

• Particulate Matter ≤ 2.5 microns (PM_{2.5})

All PM_{2.5} samplers operated by the Department are designated FRM samplers. Manual samplers are operated per the requirements set forth in 40 CFR Part 50, Appendix L. Samples are collected on 46.2 mm Polytetrafluoroethylene (PTFE) filters over a 24-hour sampling period. Air flow through the filter is maintained at 16.7 liters per minute. The flow rate must not vary more than +/-5% for five minutes over a 24-hour sample period at actual ambient temperature and pressure. Samples are retrieved within 96 hours of the end of the sample run and are kept cool (4°C or cooler) during transit to meet the thirty-day limit for final weighing.

The PTFE filters are equilibrated and weighed before and after the sample run for a minimum of 24 hours at a controlled atmosphere of 20-23°C mean temperature and 30-40% mean relative humidity. Filters are used within thirty days of initial weighing. Filters must be re-weighed within thirty days of the end of the sample run if kept at 4°C or cooler. The gain in weight in relation to the volume of air sampled is calculated in µg/m³.

Continuous PM_{2.5} monitors provide hourly measurements for AQI reporting but do not provide concentration data currently suitable for comparison to the NAAQS. During monitoring, ambient air passes through an inlet system designed to pass only particles smaller than 2.5 microns in diameter. After exiting the inlet, the sample stream is sent through a mass transducer to determine instantaneous and total flow. Particulate in the sample stream passes through a Teflon-coated glass fiber filter. This filter is weighed every two seconds. The difference between the current filter weight and the previous weight gives the total mass of the collected particulate for that period. The mass concentration is computed by dividing the total mass gained by the flow rate. Data is stored locally on redundant data acquisition systems and recovered hourly by an automated central data acquisition system.

PM_{2.5} Speciation sampling and analysis

In addition to operating PM_{2.5} samplers that allow measurement of only PM_{2.5} mass concentration, the Department also operates PM_{2.5} speciation samplers that collect samples that are analyzed to

determine the chemical makeup of PM_{2.5}. Samples are collected on a set of three cartridges over a 24-hour sampling period. The individual cartridges contain denuders and filters designed to efficiently capture the major components of PM_{2.5}.

After collection, the samples are shipped in ice chests to the EPA contract laboratory for analysis. At the laboratory the samples are analyzed using thermal optical analysis (for carbon), ion chromatography and x-ray fluorescence (for metals) to determine the presence and concentration of specific compounds. Sample results are stored in AQS.

• Sulfur Dioxide

Instruments used to continuously monitor sulfur dioxide concentrations in the atmosphere employ the FEM Ultraviolet (UV) fluorescence method. The continuous data output from the instrument is stored locally on redundant data acquisition systems and recovered hourly by an automated central data acquisition system.

Calibration of these instruments is done dynamically using EPA protocol gas mixtures containing a known concentration of sulfur dioxide in nitrogen. This gas is diluted to give varying known concentrations of sulfur dioxide. These known concentrations are supplied to the instrument, which is adjusted so that the instrument output corresponds with the specific concentrations. Calibration curves are prepared for each instrument and each measurement is automatically compared to this curve before entry into the data acquisition system.

• Carbon Monoxide

Continuous monitoring for carbon monoxide is performed by use of the FRM non-dispersive infrared correlation method. Data is stored locally on redundant data acquisition systems and recovered hourly by the Division automated central data acquisition system.

Calibration of the instrument is done dynamically using EPA Protocol gas mixtures containing a known concentration of carbon monoxide in air. The gas is diluted to give varying known concentrations of carbon monoxide. These known concentrations are supplied to the instrument,

which is adjusted so that the instrument output corresponds with the specific concentrations. Calibration curves are prepared for each instrument and each measurement is automatically compared to this curve before entry into the data acquisition system.

- **Ozone**

Ozone is monitored using the FEM Ultraviolet (UV) photometry method. The continuous data output from the instrument is stored locally on redundant data acquisition systems and recovered hourly by the Division automated central data acquisition system.

Monitors are routinely calibrated using portable ozone transfer standards. Calibration curves are prepared for each instrument and each measurement is automatically compared to this curve before entry into the data acquisition system.

- **Nitrogen Dioxide**

The FRM chemiluminescence and UV methods are used in monitoring the nitrogen dioxide concentration in the ambient air. The continuous data output from the instrument is stored locally on redundant data acquisition systems and recovered hourly by an automated central data acquisition system.

Calibration of the instrument is done dynamically using EPA protocol gas mixtures containing a known concentration of nitric oxide in nitrogen. The gas is diluted to give varying known concentrations of nitric oxide. An ozone generator and converter are used to convert Nitric Oxide (NO) to Nitrogen Dioxide (NO₂). These known concentrations are supplied to the instrument, which is adjusted so that the instrument output corresponds with the specific concentrations. Calibration curves are prepared for each instrument and each measurement is automatically compared to this curve before entry into the data acquisition system.

- **Lead**

Lead concentrations are determined from the analysis of total suspended particulate collected using high volume particulate samplers as described in 40 CFR §50 Appendix G. Particulate samples are acid extracted to dissolve the metals.

The lead content is determined using Inductively Coupled Plasma (ICP) spectrophotometry.

Sampling Frequency

Measurements of the parameters related to air quality are performed using sampling and continuous monitoring. Sampling frequency is the indicator of how often a measurement is made and reported.

Sampling typically involves collection of a sample over a period (typically 24 hours, midnight to midnight) and delivery of the sample to the laboratory for preparation and analysis. Samples are collected every day (1:1), every third day (1:3), every sixth day (1:6) and for some projects, every twelfth day (1:12) depending on the data quality objectives necessary for the project. Results of the analysis are reported as averages for the period. The EPA publishes 1:3 and 1:6 day sampling schedules used nationwide and by the Monitoring Network.⁴

Monitoring typically uses on-site analyzers that continuously sample the air and measure the pollutant of interest. Results of the analysis are reported as hourly averages.

Changes for 2010

Any planned changes in parameters monitored, the configuration or operations at the site planned for 2010 are described herein and summarized in the Summary of 2010 Network Changes. Unless otherwise indicated, changes at a site including the beginning of new monitoring activity, will be effective January 1, 2010. Ozone monitoring for 2010 at new or special project sites may start at the beginning of the ozone monitoring season (April-October).

⁴ <http://www.epa.gov/ttn/amtic/calendar.html>

LEGEND

- Combined Statistical Area
- Metropolitan Statistical Area
- Micropolitan Statistical Area
- State
- County
- Shoreline

CBSA boundaries and names are as of November 2004. All other boundaries and names are as of January 1, 2002.

Network Summaries

| 2010 Air Monitoring Stations | | | | | | | | | | | | | | | | | | | |
|-------------------------------------|-------|-------------------|-------------------------|------------|------------------|----------------------|----------|----------------|-----------------|-----------------|----|---------|----|-----------|------|---------|-----------|-----|-----|
| Region | Sites | PM _{2.5} | PM _{2.5} Cont. | Speciation | PM ₁₀ | PM _{10-2.5} | TSP/Lead | O ₃ | SO ₂ | NO ₂ | CO | Sulfate | BC | Carbonyls | SVOC | Mercury | Acid Rain | MET | VOC |
| Greenville-Spartanburg-Anderson CSA | 12 | 6 | 4 | 1 | 1 | 0 | 1 | 7 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 0 |
| Columbia CSA | 8 | 4 | 1 | 0 | 3 | 0 | 1 | 3 | 2 | 1 | 0 | 0 | 1 | 2 | 3 | 2 | 1 | 4 | 0 |
| Charlotte-Gastonia-Salisbury CSA | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Myrtle Beach-Conway-Georgetown CSA | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Augusta-Richmond County MSA | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Charleston-North Charleston MSA | 5 | 3 | 2 | 2 | 1 | 0 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 |
| Florence MSA | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rest of State | 3 | 1 | 2 | 1 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 2 | 1 |
| TOTALS | 37 | 17 | 11 | 4 | 10 | 0 | 3 | 19 | 6 | 4 | 2 | 2 | 4 | 3 | 4 | 2 | 4 | 12 | 1 |

This summary table presents the elements of the South Carolina Ambient Air Monitoring Network after implementation of the changed described in this plan.

PM_{2.5} Samplers Suitable for Comparison to the PM_{2.5} National Ambient Air Quality Standards

| Sites using Federal Reference Method | Site suitable for comparison to annual standard? | Site suitable for comparison to the 24-Hour standard? | Site Description Page number |
|---|--|---|---------------------------------|
| Taylor's | Yes | Yes | 16 |
| Greenville ESC | Yes | Yes | 17 |
| Long Creek | Yes | Yes | 21 |
| West View | Yes | Yes | 24 |
| T.K. Greg Recreation Ctr. | Yes | Yes* | 25 |
| Irmo | Yes | Yes | 28 |
| Parklane | Yes | Yes | 31 |
| Bates House | Yes | Yes | 32 |
| Sandhill | Yes | Yes | 35 |
| FAA | Yes | Yes | 50 |
| CPW | Yes | Yes | 51 |
| Sneed | Yes | Yes | 54 |
| Williams Middle School | Yes | Yes* | 55 |
| Chesterfield | Yes | Yes | 58 |
| * Sites without a significant data record but expected to be suitable for comparison to primary and secondary annual and 24-hour standards. | | | |

PM_{2.5} and Ozone Design Values 2006 – 2008

This section presents the latest ambient air quality data for currently operating monitoring sites throughout South Carolina. Only PM_{2.5} and Ozone are presented below. All other Criteria Pollutant design values were well below the level of the standards in 2008.

| PM _{2.5} Design Values 2006 – 2008 | | | |
|---|-----------------------------|-----------------------------|----------------------------|
| Site ID | Site Name | Annual (µg/m ³) | Daily (µg/m ³) |
| 45-037-0001 | Trenton | 12.5 | 26 |
| 45-073-0001 | Longcreek | 10.5 | 21 |
| 45-045-0008 | Greenville Health Dept | 14.2 | 29 |
| 45-045-0009 | Taylors | 13.8 | 28 |
| 45-083-0010 | West View Elementary School | 13.3 | 29 |
| 45-063-0008 | Irmo | 13.7 | 28 |
| 45-079-0007 | Parklane | 13.1 | 27 |
| 45-079-0019 | Bates House (USC) | 13.3 | 28 |
| 45-025-0001 | Chesterfield | 12.0 | 25 |
| 45-041-0002 | H L Sneed Middle School | 12.1 | 25 |
| 45-019-0048 | Charleston FAA Beacon | 11.0 | 24 |
| 45-019-004 | Charleston Public Works | 10.3 | 23 |

| Ozone Design Values 2006 – 2008 | | |
|---------------------------------|----------------|--------------------|
| Site ID | Site Name | Design Value (ppm) |
| 45-001-0001 | Due West | 0.078 |
| 45-003-0003 | Jackson | 0.076 |
| 45-015-0002 | Bushy Park | 0.063 |
| 45-019-0046 | Cape Romain | 0.072 |
| 45-021-0002 | Cowpens | 0.074 |
| 45-025-0001 | Chesterfield | 0.073 |
| 45-029-0002 | Ashton | 0.073 |
| 45-031-0003 | Pee Dee | 0.075 |
| 45-037-0001 | Trenton | 0.070 |
| 45-073-0001 | Long Creek | 0.071 |
| 45-077-0002 | Clemson CMS | 0.080 |
| 45-079-0007 | Parklane | 0.078 |
| 45-079-0021 | Congaree Bluff | 0.071 |
| 45-079-1001 | Sandhill | 0.079 |
| 45-083-0009 | NSFS | 0.084 |
| 45-091-0006 | York | 0.077 |

Summary of 2010 Network Changes

Greenville-Spartanburg-Anderson CSA

Anderson MSA

No changes planned for 2010.

Greenville MSA

Termination of the Greenville CHD site (45-045-0008)

Installation of a lead sampler at Greenville ESC (45-045-0015).

Installation of NO₂ and CO monitoring at Greenville ESC (45-045-0015).

Spartanburg MSA

No changes planned for 2010.

Columbia-Newberry CSA

Columbia MSA

Installation of a lead sampler at Bates House (45-079-0019).

PM_{2.5} sampling will be relocated from Sandhill (45-079-1001) to Parklane proposed NCore(45-079-0007)

Sulfate monitoring will be terminated at Irmo (45-063-0008).

Termination of the Olympia site (45-063-0018).

Charlotte-Gastonia-Salisbury CSA

Charlotte-Gastonia-Concord MSA

No changes planned for 2010.

Myrtle Beach-Conway-Georgetown CSA

Georgetown Micropolitan Statistical Area

No changes planned for 2010.

Augusta-Richmond County MSA

No changes planned for 2010.

Florence MSA

No changes planned for 2010.

Charleston-North Charleston MSA

Sulfate monitoring will be established at Cape Romain (45-019-0046).

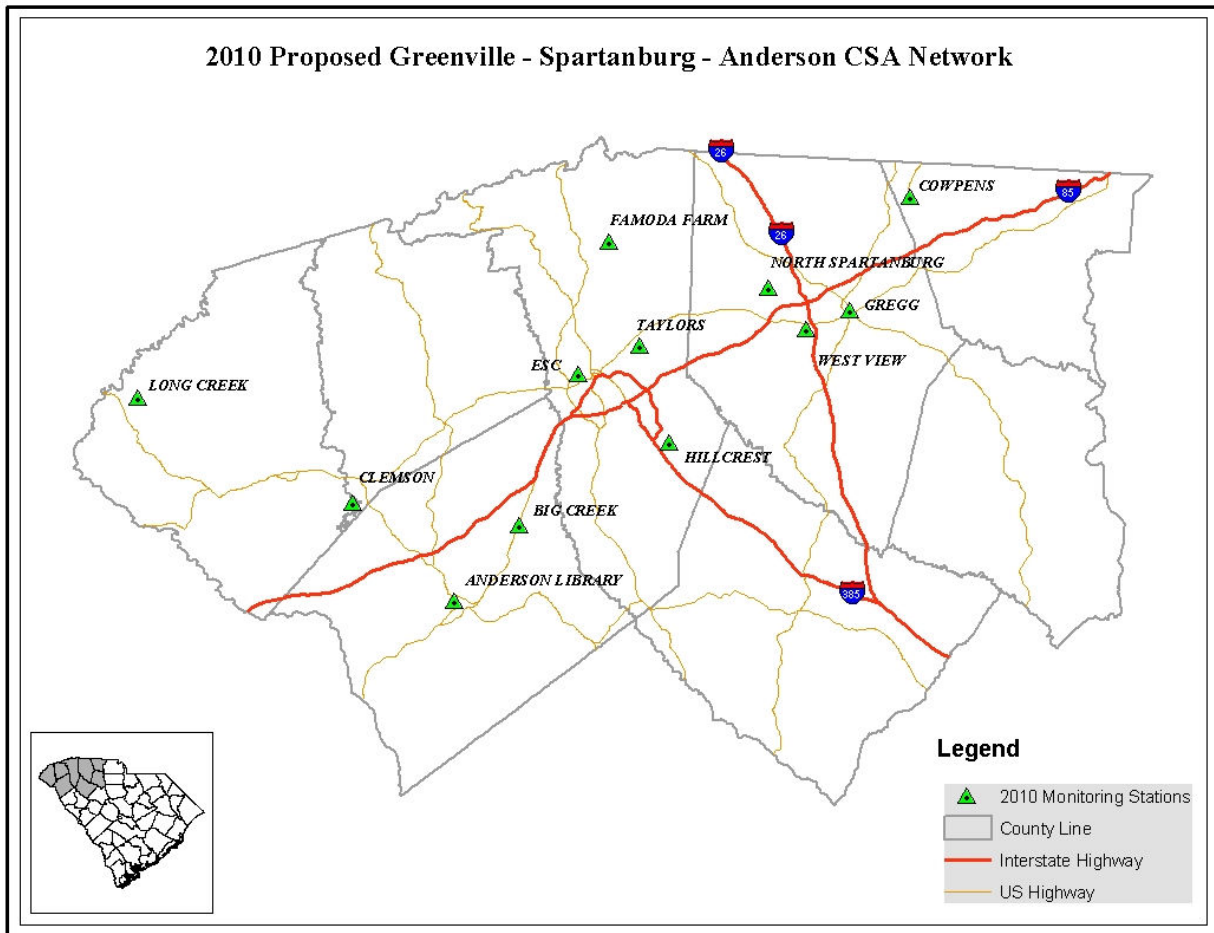
Installation of a lead sampler at Jenkins Ave. Fire Station (45-019-0003).

Remainder of State

No changes planned for 2010.

Site Descriptions

Greenville-Spartanburg-Anderson CSA



Classification of monitoring type by site

| AIRS ID | Site Name | PM _{2.5} | PM _{2.5} Cont. | Speciation | PM ₁₀ | PM _{10-2.5} | Lead | O ₃ | SO ₂ | NO ₂ | CO | Sulfate | BC | Carbonyls | SVOC | VOCs | Mercury | Acid Rain | MET |
|---|-----------------------------------|-------------------|-------------------------|------------|------------------|----------------------|------|----------------|-----------------|-----------------|----|---------|----|-----------|------|------|---------|-----------|-----|
| 45-007-0004 | Anderson Library | | ○ | | | | | | | | | | | | | | | | |
| 45-007-0005 | Big Creek | | | | | | | ● | | | | | | | | | | | |
| 45-021-0002 | Cowpens | | | | | | | ○ | | | | | | | | | | ○ | |
| 45-045-0009 | Taylors* | ●● | | | | | | | | | | | | | | | | | |
| 45-045-0015 | Greenville ESC | ● | ○ | ○ | ● | | ● | | ○ | ○ | ○ | ○ | ○ | | | | | | ○ |
| 45-045-0016 | Hillcrest | | | | | | | ● | | | | | | | | | | | |
| 45-045-1003 | Famoda Farms | | | | | | | ● | | | | | | | | | | | |
| 45-073-0001 | Long Creek | ● | ○ | | | | | ○ | ○ | | | | | | | | | ○ | ○ |
| 45-077-0002 | Clemson | | | | | | | ● | | | | | | | | | | | |
| 45-083-0009 | North Spartanburg Fire Station #2 | | | | | | | ● | | | | | | | | | | | |
| 45-083-0010 | West View | ● | | | | | | | | | | | | | | | | | |
| 45-083-0011 | T.K. Gregg | ○ | ● | | | | | | | | | | | | | | | | |
| | TOTAL | 6 | 4 | 1 | 1 | 0 | 1 | 7 | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 2 |
| ○ SPM / Other ● SLAMS ●● indicates duplicate QA samplers *see individual site description for site/parameter retention | | | | | | | | | | | | | | | | | | | |

Anderson Library**CSA/MSA:** Greenville-Spartanburg-Anderson CSA / Anderson MSA**AQS Site ID:** 45-007-0004**Location:** 300 N. McDuffie Street**County:** Anderson**Coordinates:** 34.506, -82.648**Date Established:** March 25, 2008**Site Evaluation:** pending

While there are no minimum requirements for PM_{2.5} monitoring in the Anderson MSA, characterize PM_{2.5} concentrations in the upstate and to provide near real time reporting of air quality to the public, is the Department has determined it appropriate to operate a continuous PM_{2.5} monitor in the City of Anderson. The Department established a Special Purpose site within the City of Anderson with the cooperation of local government and stakeholders.

Changes for 2010

No changes are planned for 2010.

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|-------------------|--------------|---------------------|-------------|------------------|-----------------|--------------------|
| PM _{2.5} | Neighborhood | Population Exposure | SPM | 2.0 | TEOM | Continuous |

Big Creek**CSA/MSA:** Greenville-Spartanburg-Anderson CSA/ Anderson MSA**AQS Site ID:** 45-007-0005**Location:** 215 McAlister Road**County:** Anderson**Coordinates:** 34.623, -82.532**Date Established:** June 6, 2008**Site Evaluation:** pending

No picture available.

This site satisfies the minimum requirements for ozone monitoring in the Anderson MSA. This site is northeast of the City of Anderson in the area expected to be representative of maximum ozone concentrations in the Anderson MSA.

Changes for 2010

No changes are planned for 2010.

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|-----------|-------|---|-------------|------------------|----------------------------|--------------------|
| Ozone | Urban | Max Ozone Concentration / Upwind Background | SLAMS | 4.0 | FEM Ultraviolet Photometry | Continuous |

Cowpens

CSA/MSA: Greenville-Spartanburg-Anderson CSA

AQS Site ID: 45-021-0002

Location: McGinnis Road (Old SC 110)

County: Cherokee

Coordinates: +35.130396, -81.816567

Date Established: March 25, 1988

Site Evaluation: The most recent site evaluation was conducted on June 26, 2006.



The Cowpens site is located in northwestern Cherokee County at the Cowpens National Battlefield. Cowpens is sited to represent ozone concentrations between the Greenville-Spartanburg-Anderson and the Charlotte-Gastonia-Salisbury CSA. The operation of the ozone monitor fulfills the ambient monitoring commitment in the Cherokee County Maintenance Plan.⁵ In addition to ozone, the Cowpens site also supports an acid precipitation sampler. The sample inlets are 23.0 meters from the nearest road.

The monitor will be operated thru the 2014 ozone season to fulfill the Maintenance Plan commitments.

Changes for 2010

No changes are planned for 2010

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|-----------|----------|---------------------|-------------|------------------|----------------------------|--------------------|
| Ozone | Urban | Upwind / Background | SPM | 3.0 | FEM Ultraviolet Photometry | Continuous |
| Acid Rain | Regional | Regional Transport | SPM | 1.5 | IC | Weekly |

⁵ 110(a)(1) Maintenance Plan: 8-hour Ozone National Ambient Air Quality Standard, Cherokee County, South Carolina, December, 2007

Taylors

CSA/MSA: Greenville-Spartanburg-Anderson CSA

AQS Site ID: 45-045-0009

Location: 405 Brushy Creek Road

County: Greenville

Coordinates: +34.899141, -82.313070

Date Established: May 1, 1999

Site Evaluation: The most recent site evaluation was conducted on April 7, 2005.



This monitoring site is in a residential area of the town of Taylors on the grounds of a city fire station. The Taylors site was originally established as the location of one of two PM_{2.5} Core samplers representing the Greenville-Spartanburg Monitoring Planning Area. The Taylors site has a FRM PM_{2.5} and a collocated PM_{2.5} FRM used for determination of method precision. The sample inlets are 27.0 meters from the nearest road.

Changes for 2010

The Department intends to continue evaluation of an improved monitoring location for PM_{2.5} in the Greenville urbanized area within the next 18 months. Monitoring at Taylors would be discontinued when the procedures for relocating a site have been completed.

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|------------------------------|--------------|---------------------|---------------|------------------|-----------------|--------------------|
| PM _{2.5} | Neighborhood | Population Exposure | SLAMS | 4.4 | FRM Gravimetric | 1:1 |
| Collocated PM _{2.5} | Neighborhood | Population Exposure | QA Collocated | 4.4 | FRM Gravimetric | 1:6 |

Greenville Employment Security Commission (ESC)

CSA/MSA: Greenville-Spartanburg-Anderson CSA / Greenville MSA

AQS Site ID: 45-045-0015

Location: 101 Perry Avenue

County: Greenville

Coordinates: +34.853985, -82.412754

Date Established: April 11, 2008

Site Evaluation: pending



With the cooperation of local government and stakeholders, the Department established this location as a potential replacement for the Greenville CHD site. Once complete year of data has been collected at both sites, and the Department has determined that the Greenville ESC site is a suitable replacement site for Greenville CHD. Data comparisons between the two sites reveal similar concentrations throughout the year. The Greenville ESC site meets siting criteria better than the Greenville CHD site. The Department believes that the Greenville ESC site is more representative of air quality in the Greenville area.

The site was established on 4/11/2008. In addition, this site also has continuous $PM_{2.5}$, PM_{10} , Sulfur Dioxide, and measurements for wind speed and wind direction. The sample inlets are 15.0 meters from the nearest road.

Changes for 2010

Lead sampling will begin by January 1, 2010. It is also anticipated that speciated $PM_{2.5}$ sampling will begin to be permanently located at the Greenville ESC site after the second quarter of 2009. Additionally, parameters originally located at the Greenville CHD (45-045-0008) will be relocated to this site during 2009. The Department will request that the $PM_{2.5}$ will be designated as a required SLAMS site to fulfill the $PM_{2.5}$ monitoring requirement for the Greenville MSA.

Monitors:

(Table continues on next page)

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|----------------------|--------------|---|----------------------------|------------------|-----------------|--------------------|
| $PM_{2.5}$ | Neighborhood | Population Exposure / Welfare Related Impacts | SLAMS | 4.4 | FRM Gravimetric | 1:1 |
| $PM_{2.5}$ | Neighborhood | Population Exposure | SPM | 4.0 | TEOM | Continuous |
| Speciated $PM_{2.5}$ | Neighborhood | Population Exposure | Supplement -ary speciation | 4.5 | STN Protocol | 1:6 |
| PM_{10} | Neighborhood | Population | SLAMS | 4.0 | FEM TEOM | Continuous |

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|------------------------|--------------|--|----------------|------------------|---|--------------------|
| | hood | Exposure | | | | |
| Lead | Neighborhood | Population Exposure | SLAMS | | ICP | 1:6 |
| Sulfur Dioxide | Neighborhood | Population Exposure | SPM | 4.0 | FEM UV fluorescence | Continuous |
| Nitrogen Dioxide | Neighborhood | Population Exposure / General Background | SPM | 4.0 | FRM Chemiluminescence | Continuous |
| Carbon Monoxide | Middle | Max Precursor Impact | SPM | 4.0 | FRM Nondispersive Infrared Photometry | Continuous |
| Sulfate | Neighborhood | Population Exposure / General Background | Non-regulatory | 4.5 | Catalytic thermal reduction / Pulsed fluorescence | Continuous |
| Black Carbon | Neighborhood | Population Exposure / General Background | Non-regulatory | 4.5 | Optical absorption | Continuous |
| Wind Speed / Direction | | Local Conditions | | 10 | Instruments for wind speed and wind direction | Continuous |

Hillcrest Middle School**CSA/MSA:** Greenville-Spartanburg-Anderson CSA / Greenville MSA**AQS Site ID:** 45-045-0016**Location:** 510 Garrison Road**County:** Greenville**Coordinates:** 34.752, -82.257**Date Established:** February 17, 2009**Site Evaluation:** pending

No picture available.

This site will serve as one of the two required ozone monitors in the Greenville MSA. It is expected that this site will represent the ozone concentrations near populated areas in southern Greenville County.

Changes for 2010

No changes are planned for 2010.

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|-----------|-------|---------------------|-------------|------------------|----------------------------|--------------------|
| Ozone | Urban | Population Exposure | SLAMS | 2 | FEM Ultraviolet Photometry | Continuous |

Famoda Farms**CSA/MSA:** Greenville-Spartanburg-Anderson CSA / Greenville MSA**AQS Site ID:** 45-045-1003**Location:** 7560 Mountain View Road**County:** Greenville**Coordinates:** 35.057, -82.373**Date Established:** August 7, 2008**Site Evaluation:** pending

No picture available.

This site will serve as one of the two required ozone monitors in the Greenville MSA. It is expected that this site will represent the maximum ozone concentration for the Greenville MSA.

Changes for 2010

No changes are planned for 2010.

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|-----------|-------|-------------------------|-------------|------------------|----------------------------|--------------------|
| Ozone | Urban | Max Ozone Concentration | SLAMS | 2.0 | FEM Ultraviolet Photometry | Continuous |

Long Creek

CSA/MSA: Greenville-Spartanburg-Anderson CSA

AQS Site ID: 45-073-0001

Location: Round Mt. Fire Tower

County: Oconee

Coordinates: +34.805261, -83.237700

Date Established: August 1, 1983

Site Evaluation: The most recent site evaluation was conducted on February 18, 2005.



The Long Creek monitoring site is located on Round Mountain in northwest Oconee County. The Long Creek site was established as part of the Southern Oxidant Study. It provides a unique vantage for monitoring the impacts of transported pollutants. Long Creek has samplers for PM_{2.5} and acid rain and has continuous monitors for O₃, PM_{2.5}, SO₂, and precipitation. The sample inlets are 11.0 meters from the nearest road.

Due to the importance of measuring region-wide SO₂, PM_{2.5} and ozone concentrations, the unique location and collocated monitoring activity, the Department has determined that current monitoring at this site should be continued.

Changes for 2010

The Department intends to continue to work with the land-owner to improve site exposure due to recent tree growth around the site.

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|-------------------|--------------|----------------------|----------------|------------------|----------------------------|------------------------|
| PM _{2.5} | Urban | General / Background | SLAMS | 2.6 | FRM Gravimetric | 1:3 |
| PM _{2.5} | Urban | General / Background | SPM | 4.3 | TEOM 50°C | Continuous |
| Ozone | Regional | General / Background | SPM | 4.3 | FEM Ultraviolet Photometry | Continuous |
| Sulfur Dioxide | Regional | Regional Transport | SPM | 4.3 | FEM UV fluorescence | Continuous |
| Acid Rain | Neighborhood | Trends | SPM | 1.5 | IC | 1 week samples Tue-Tue |
| Precipitation | Neighborhood | Local Conditions | Non-regulatory | 1.5 | Tipping bucket | Continuous |

Clemson CMS**CSA/MSA:** Greenville-Spartanburg-Anderson CSA / Greenville MSA**AQS Site ID:** 45-077-0002**Location:** 106 Hope Well Road**County:** Pickens**Coordinates:** +34.653606, -82.838659**Date Established:** July 14, 1979**Site Evaluation:** The most recent site evaluation was conducted on March 18, 2003.

The Clemson Continuous Monitoring Site (CMS) site is located on the grounds of Clemson University near the western border of Pickens County. This monitor was intended to document ozone concentrations upwind of the Greenville-Spartanburg urbanized area. The sample inlets are 27.4 meters from the nearest road.

Changes for 2010

No changes are planned for 2010. A replacement that will better meet the monitoring objectives and represent Pickens County is being sought.

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|-----------|-------|--------------------|-------------|------------------|----------------------------|--------------------|
| Ozone | Urban | General background | SLAMS | 3.5 | FEM Ultraviolet Photometry | Continuous |

North Spartanburg Fire Station #2

CSA/MSA: Greenville-Spartanburg-Anderson CSA / Spartanburg MSA

AQS Site ID: 45-083-0009

Location: 1556 John Dodd Road

County: Spartanburg

Coordinates: +34.988706, -82.075802

Date Established: April 4, 1990

Site Evaluation: The most recent site evaluation was conducted on June 8, 2006.



This monitoring site is located in rural Spartanburg County, northwest of the city of Spartanburg. This site was established as a maximum ozone concentration monitor for the Greenville-Spartanburg-Anderson urban area on 04/04/1990. This monitor is designated SLAMS and fulfills the requirement for a maximum concentration site for the Spartanburg MSA.

The sample inlets are 85.0 meters from the nearest road.

Changes for 2010

No changes are planned at this monitoring site.

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|-----------|-------|-------------------------|-------------|------------------|----------------------------|--------------------|
| Ozone | Urban | Max Ozone Concentration | SLAMS | 3.6 | FEM Ultraviolet Photometry | Continuous |

West View

CSA/MSA: Greenville-Spartanburg-Anderson CSA / Spartanburg MSA

AQS Site ID: 45-083-0010

Location: 4198 Copper Line Road

County: Spartanburg

Coordinates: +34.926839, -82.005211

Date Established: November 10, 1998

Site Evaluation: The most recent site evaluation was conducted on March 29, 2006.



The West View site is located in Spartanburg County at the West View Elementary School, west of the City of Spartanburg. The site was established as a PM_{2.5} population exposure sampler on 11/10/1998 and one of the two Core samplers placed to represent the Greenville-Spartanburg Monitoring Planning Area.

The sample inlets are 99.0 meters from the nearest road.

Redefinition of MSA boundaries, the requirement for a maximum exposure/population oriented site and requirement for collocation of continuous monitoring for reporting to the public necessitate relocation of this monitor.

A site more representative of maximum concentrations in the newly designated MSA has been established at the T.K. Gregg Recreation Center (45-083-0011). Within the next 12 months, the Department will have collected one year's worth of concurrent data from the T.K. Gregg site and will evaluate and determine if relocation is appropriate.

Changes for 2010

No changes are planned for 2010.

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|-------------------|--------------|---------------------|-------------|------------------|-----------------|--------------------|
| PM _{2.5} | Neighborhood | Population Exposure | SLAMS | 2.6 | FRM Gravimetric | 1:1 |

T.K. Gregg Recreation Center**CSA/MSA:** Greenville-Spartanburg-Anderson CSA / Spartanburg MSA**AQS Site ID:** 45-083-0011**Location:** 267 Northview Street**County:** Spartanburg**Coordinates:** 34.956, -81.925**Date Established:** December 29, 2008**Site Evaluation:** pending

With the cooperation of local government and stakeholders, the Department has established a new PM_{2.5} site in the downtown Spartanburg area to meet the 40 CFR Part 58 Appendix D requirements for monitoring objective and collocated continuous monitoring and reporting. T.K. Gregg will be operated concurrently with the Westview site for no less than one year. If the site meets the monitoring objectives, the Department will recommend to EPA relocation of all of the monitoring activity to the more appropriate location. This site also supports the required collocated PM_{2.5} continuous monitor for the Spartanburg MSA.

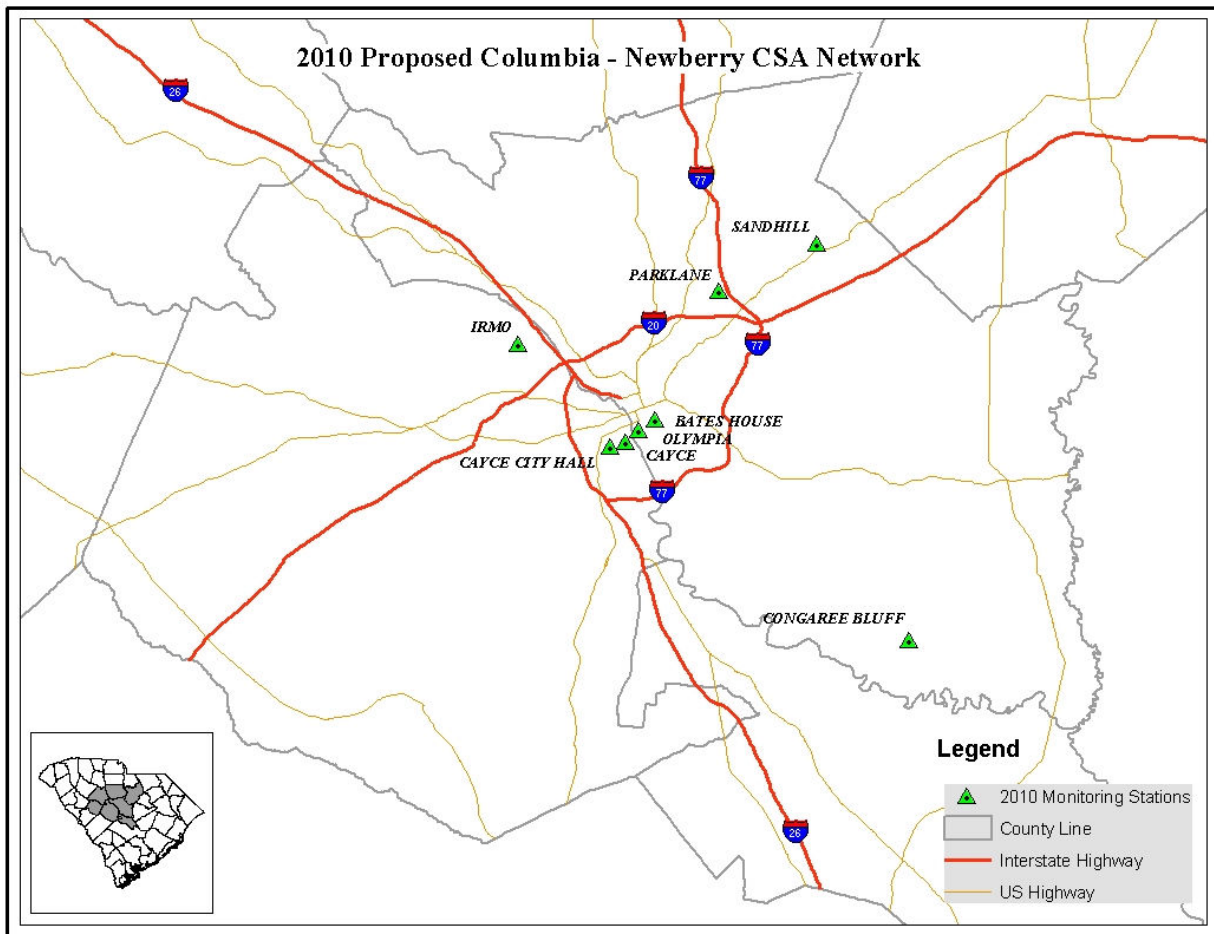
Changes for 2010

No changes are planned for 2010.

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|-------------------|--------------|-----------------------|-------------|------------------|-----------------|--------------------|
| PM _{2.5} | Neighborhood | Highest Concentration | SPM | 2.5 | FRM Gravimetric | 1:1 |
| PM _{2.5} | Neighborhood | Highest Concentration | SLAMS | 3.0 | TEOM | Continuous |

Columbia-Newberry CSA



Classification of monitoring type by site

| AIRS ID | Site Name | PM _{2.5} | PM _{2.5} Cont. | Speciation | PM ₁₀ | PM _{10-2.5} | Lead | O ₃ | SO ₂ | NO ₂ | CO | Sulfate | BC | Carbonyls | SVOC | VOC | Mercury | Acid Rain | MET |
|--|-------------------|-------------------|-------------------------|------------|------------------|----------------------|------|----------------|-----------------|-----------------|----|---------|----|-----------|------|-----|---------|-----------|-----|
| 45-063-0008 | Irmo | ● | ● | | | | | | ○ | | | | ○ | ○ | ○ | | | | |
| 45-063-0009 | Cayce CMS | | | | ○ | | | | | | | | | | | | | | ○ |
| 45-063-0010 | Cayce City Hall | | | | ● | | | | | | | | | | | | | | |
| 45-079-0007 | Parklane | ○ | | | | | | ● | | | | | | | ○ | | | | ○ |
| 45-079-0019 | Bates House (USC) | ●● | | | ● | | ● | | | | | | | | | | | | |
| 45-079-0020 | State Hospital | | | | | | | | | | | | | ○ | ○ | | | | |
| 45-079-0021 | Congaree Bluff | | | | | | | ○ | ○ | | | | | | | | ○○ | ○ | ○ |
| 45-079-1001 | Sandhill | | | | | | | ● | | ○ | | | | | | | | | ○ |
| | TOTAL | 4 | 1 | 0 | 3 | 0 | 1 | 3 | 2 | 1 | 0 | 0 | 1 | 2 | 3 | 0 | 2 | 1 | 4 |
| ○ SPM / Other ●● indicates duplicate QA samplers ● SLAMS | | | | | | | | | | | | | | | | | | | |

Irmo

CSA/MSA: Columbia-Newberry CSA / Columbia MSA

AQS Site ID: 45-063-0008

Location: 200 Leisure Lane

County: Lexington

Coordinates: +34.051017, -81.154950

Date Established: April 7, 1989

Site Evaluation: The most recent site evaluation was conducted on February 25, 2005.



This site is located in Lexington County in the town of Irmo. The Irmo site has a sampler for PM_{2.5} and continuous monitors for SO₂, black carbon and PM_{2.5}. Additionally, this site has a sampler collecting carbonyl and SVOC samples on a 1:6 schedule. The sample inlets are 43.4 meters from the nearest road. The Irmo site supports the required collocated PM_{2.5} continuous monitor for the MSA. The Department plans to complete evaluation of alternative site locations in 2009 to evaluate the representative scale of monitoring in the area.

Changes for 2010

Sulfate monitoring will be removed.

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|------------------------------|--------------|--|----------------|------------------|-----------------------------|--------------------|
| PM _{2.5} | Neighborhood | Population Exposure | SLAMS | 5.0 | FRM Gravimetric | 1:1 |
| Continuous PM _{2.5} | Neighborhood | Population Exposure | SLAMS | 4.6 | TEOM 30°C | Continuous |
| SO ₂ | Neighborhood | Source-Oriented | SPM | 3.4 | FEM UV fluorescence | Continuous |
| Black Carbon | Neighborhood | Population Exposure / General Background | Non-regulatory | 4.0 | Optical absorption | Continuous |
| Carbonyls | Neighborhood | Population Exposure | Non-regulatory | 3.9 | HPLC Ultraviolet Absorption | 1:6 |
| SVOC | Neighborhood | Population Exposure | Non-regulatory | 3.9 | PUF/GCMS | 1:6 |

Cayce CMS

CSA/MSA: Columbia-Newberry CSA / Columbia MSA

AQS Site ID: 45-063-0009

Location: 609 Frink Street

County: Lexington

Coordinates: +33.973389, -81.052675

Date Established: October 26, 1991

Site Evaluation: The most recent site evaluation was conducted on May 8, 2006.



This site is located in Lexington County in the city of Cayce. The PM₁₀ is a Special Purpose Monitor and the site was established as a source-oriented monitor in an area where there is a concentration of industrial particulate sources. In addition to PM₁₀, Cayce CMS has instruments for measuring precipitation, wind speed and wind direction. Cayce CMS represents middle scale concentrations of PM₁₀ in an area dominated by point sources and dust reentrained by mobile sources. The sample inlets are 4.9 meters from the nearest road.

The data collected at this location is intended for use by the Department, local government and industry to enable quick response to the impacts of local activities to minimize emissions. While not representative of population exposure, the continued availability of the data is important to the efforts of the Department and local stakeholders to protect air quality in nearby communities.

Changes for 2010

No changes are planned for 2010.

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|------------------------|--------|----------------------|----------------|------------------|---|--------------------|
| PM ₁₀ | Middle | Source Oriented | SPM | 4.3 | TEOM Gravimetric | Continuous |
| Wind Speed / Direction | | Local Conditions | Non-regulatory | 10 | Instruments for wind speed and wind direction | Continuous |
| Precipitation | | General / Background | SPM | 4.2 | | Hourly |

Cayce City Hall

CSA/MSA: Columbia-Newberry CSA / Columbia MSA

AQS Site ID: 45-063-0010

Location: 1800 12th Street Extension, Cayce, SC

County: Lexington

Coordinates: 33.969, -81.066

Date Established: December 6, 2007

Site Evaluation: pending



This site replaced the Cayce Fire Station TSP site, changing the monitored parameter from TSP to PM₁₀ and changing the measurement method from a 1:6 frequency sampler to a continuous monitor.

Cayce City Hall was established to measure PM₁₀ concentrations in populated areas and to demonstrate that the occasional high concentrations observed at Cayce CMS do not impact the neighborhoods surrounding the industrialized area. Cayce City Hall is in an area dominated by area sources.

The sample inlet is 32.0 meters from the nearest road.

Changes for 2010

No changes are planned for 2010.

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|------------------|--------------|---------------------|-------------|------------------|-----------------|--------------------|
| PM ₁₀ | Neighborhood | Population Exposure | SLAMS | 2.4 | TEOM | Continuous |

Parklane**CSA/MSA:** Columbia-Newberry CSA / Columbia MSA**AQS Site ID:** 45-079-0007**Location:** 8311 Parklane Rd.**County:** Richland**Coordinates:** +34.093959, -80.962304**Date Established:** April 3, 1980**Site Evaluation:** The most recent site evaluation was conducted on March 22, 2007.

The Parklane site is located in north central Richland County. The Parklane site has samplers for acid rain and has continuous monitoring for ozone and precipitation. Additionally, the site has a sampler for semi-volatile compounds. The sample inlets are 57.0 meters from the nearest road.

The site was originally placed to provide downwind, edge of the Columbia urban area population exposure measurements. The site also provides a facility for training and equipment evaluation convenient to the Columbia DHEC air laboratory.

Changes for 2010

PM_{2.5} sampling will be re-established at the site. This site has been proposed to the EPA as an urban NCore site.

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|-------------------|--------------|-------------------------|----------------|------------------|----------------------------|--------------------|
| PM _{2.5} | Neighborhood | Population Exposure | SPM | | FRM Gravimetric | 1:3 |
| Ozone | Neighborhood | Max Ozone Concentration | SLAMS | 4.4 | FEM Ultraviolet Photometry | Continuous |
| SVOC | Neighborhood | Population Exposure | Non-regulatory | 2.3 | PUF-GC/MS | 1:6 |
| Precipitation | | Local Conditions | Non-regulatory | 1.5 | Tipping Bucket | Continuous |

Bates House (USC)**CSA/MSA:** Columbia-Newberry CSA / Columbia MSA**AQS Site ID:** 45-079-0019**Location:** 323 S. Bull Street**County:** Richland**Coordinates:** +33.991509, -81.024141**Date Established:** November 24, 1998**Site Evaluation:** The most recent site evaluation was conducted on March 17, 2003.

The Bates House (USC) site is located in Richland County on the University of South Carolina (USC)-Columbia campus. The Bates House site has a sampler for $PM_{2.5}$. Additionally, this site has collocated precision sampling for $PM_{2.5}$. The sample inlets are 28.8 meters from the nearest road.

A continuous PM_{10} sampler was installed in late 2005 as an element of the USC Particulate Study adding more timely information to the public than was available from the SLAMS PM_{10} sampler. The continuous data was intended to provide more detailed information to establish baseline and measurement of potential impacts of a new biomass facility. The continuous monitor has replaced the filter sampling as the SLAMS monitor. The site has collocated wind measurement equipment (3m) operated by the USC Geography Department.

Changes for 2010

Lead sampling will begin by January 1, 2010.

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|-----------------------|--------------|---------------------|---------------|------------------|-----------------|--------------------|
| $PM_{2.5}$ | Neighborhood | Population Exposure | SLAMS | 2.3 | FRM Gravimetric | 1:1 |
| Collocated $PM_{2.5}$ | Neighborhood | Population Exposure | QA Collocated | 2.3 | Gravimetric | 1:6 |
| PM_{10} | Neighborhood | Population Exposure | SLAMS | 3.1 | TEOM | Continuous |
| Lead | Neighborhood | Population Exposure | SLAMS | | ICP | 1:6 |

State Hospital

CSA/MSA: Columbia-Newberry CSA / Columbia MSA

AQS Site ID: 45-079-0020

Location: 2100 Bull Street

County: Richland

Coordinates: +34.015494, -81.034179

Date Established: January 7, 1999

Site Evaluation: The most recent site evaluation was conducted on February 9, 2006.



The State Hospital site is located in Columbia near the intersection of Elmwood Avenue and Bull Street on the grounds of the South Carolina State Hospital. State Hospital has samplers for carbonyls and semi-volatile organic compounds. The sample inlets are 10.0 meters from the nearest road.

Changes for 2010

No changes are planned for 2010.

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|-----------|--------------|----------------------|----------------|------------------|-----------------------------|--------------------|
| Carbonyls | Neighborhood | General / Background | Non-regulatory | 3.9 | HPLC Ultraviolet Absorption | 1:6 |
| SVOC | Neighborhood | General / Background | Non-regulatory | 5.0 | PUF-GC/MS | 1:6 |

Congaree Bluff

CSA/MSA: Columbia-Newberry CSA / Columbia MSA

AQS Site ID: 45-079-0021

Location: 1850 South Cedar Creek Road

County: Richland

Coordinates: +33.814680, -80.781135

Date Established: December 27, 1999

Site Evaluation: The most recent site evaluation was conducted on April 11, 2005.



The Congaree Bluff site is located in southern Richland County. The site is located in a rural setting within the boundaries of the Congaree National Park. The Congaree Bluff site has monitors for ozone, SO₂, mercury vapor and precipitation. Congaree Bluff also has samplers for mercury deposition and acid rain. The sample inlets are 191.7 meters from the nearest road.

The Congaree Bluff monitoring continues a data record begun in 1981 with the establishment of the Congaree Swamp site (45-079-1006). The original site was established in cooperation with the Department of the Interior and the support of the General

Assembly to provide long term monitoring in this unique area. The Congaree Swamp site was relocated to the current Congaree Bluff site in 2001.

The national park service collects wind data on a collocated 30 meter wind tower.

Changes for 2010

There are no changes planned for 2010.

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|--------------------|--------------|----------------------|----------------|------------------|--------------------------------|--------------------|
| Ozone | Urban | General / Background | SPM | 4.4 | FEM Ultraviolet Photometry | Continuous |
| SO ₂ | Urban | General / Background | SPM | 4.4 | FEM UV Fluorescence | Continuous |
| Mercury (vapor) | Urban | Source Oriented | Non-regulatory | 4.4 | Cold Vapor Atomic Fluorescence | Continuous |
| Mercury Deposition | Urban | Source Oriented | NADP-MDN | 1.5 | MDN protocol | Weekly samples |
| Acid Rain | Regional | Regional Transport | Non-regulatory | 1.5 | IC | 1 Week Tue-Tue |
| Precipitation | Neighborhood | Local Conditions | Non-regulatory | 1.5 | Tipping Bucket | Continuous |

Sandhill Experimental Station

CSA/MSA: Columbia-Newberry CSA / Columbia MSA

AQS Site ID: 45-079-1001

Location: 900 Clemson Road

County: Richland

Coordinates: +34.131262, -80.868318

Date Established: January 1, 1959

Site Evaluation: The most recent site evaluation was conducted on July 1, 2002.



The Sandhill Experimental Station site is located in northeastern Richland County, downwind from the Columbia metropolitan area. This site is located in a rapidly urbanizing portion of the city of Columbia. The Sandhill site measures PM_{2.5}, NO₂, Ozone, wind direction, and wind speed.

The sample inlets are 33.5 meters from the nearest road.

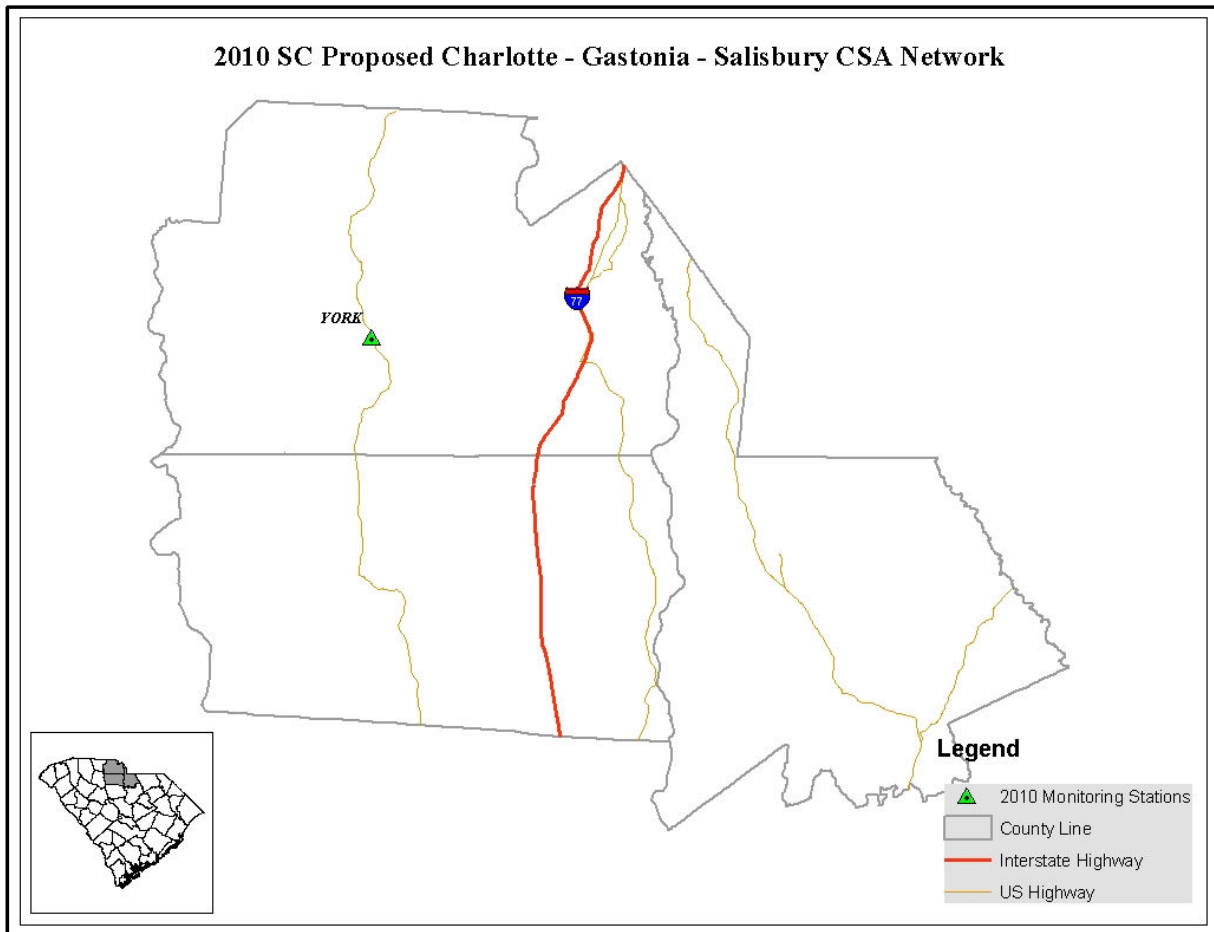
Changes for 2010

PM_{2.5} sampling is being discontinued and relocated to Parklane.

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|------------------------|--------------|---|----------------|------------------|---|--------------------|
| Ozone | Urban | Max Ozone Concentration | SLAMS | 4.3 | FEM Ultraviolet Photometry | Continuous |
| NO ₂ | Urban | General / Background Max Precursor Emissions Impact | SPM | 4.3 | FRM Chemiluminescence | Continuous |
| Wind Speed / Direction | Neighborhood | Local Conditions | Non-regulatory | 10.0 | Instruments for wind speed and wind direction | Continuous |

Charlotte-Gastonia-Salisbury CSA (part)



Classification of monitoring type by site

| AIRS ID | Site Name | PM _{2.5} | PM _{2.5} Cont. | Speciation | PM ₁₀ | PM _{10-2.5} | Lead | O ₃ | SO ₂ | NO ₂ | CO | Sulfate | BC | Carbonyls | SVOC | VOCs | Mercury | Acid Rain | MET |
|--|-----------|-------------------|-------------------------|------------|------------------|----------------------|------|----------------|-----------------|-----------------|----|---------|----|-----------|------|------|---------|-----------|-----|
| 45-021-0002 | York CMS | | | | | | | ● | | | | | | | | | | | O |
| | TOTAL | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| ○ SPM / Other ● SLAMS ●● indicates duplicate QA monitors | | | | | | | | | | | | | | | | | | | |

York CMS

CSA/MSA: Charlotte-Gastonia-Salisbury CSA / Charlotte-Gastonia-Concord MSA

AQS Site ID: 45-091-0006

Location: 2316 Chester Highway (US 321)

County: York

Coordinates: +34.935817, -81.228409

Date Established: March 30, 1993

Site Evaluation: The most recent site evaluation was conducted on June 13, 2006.



The York CMS site is located in south-central York County. The site was established to represent background levels near the Charlotte urban area. This monitor is located in a rural setting to support Charlotte-Rock Hill reporting and forecasting. The sample inlets are 171.4 meters from the nearest road.

This site is important for forecasting ozone concentrations in the Charlotte Metropolitan area. Additionally, the long historical record and location of the site make the data useful to both North and South Carolina Air Programs. In addition to measuring ozone, the York site also measures wind speed and

wind direction.

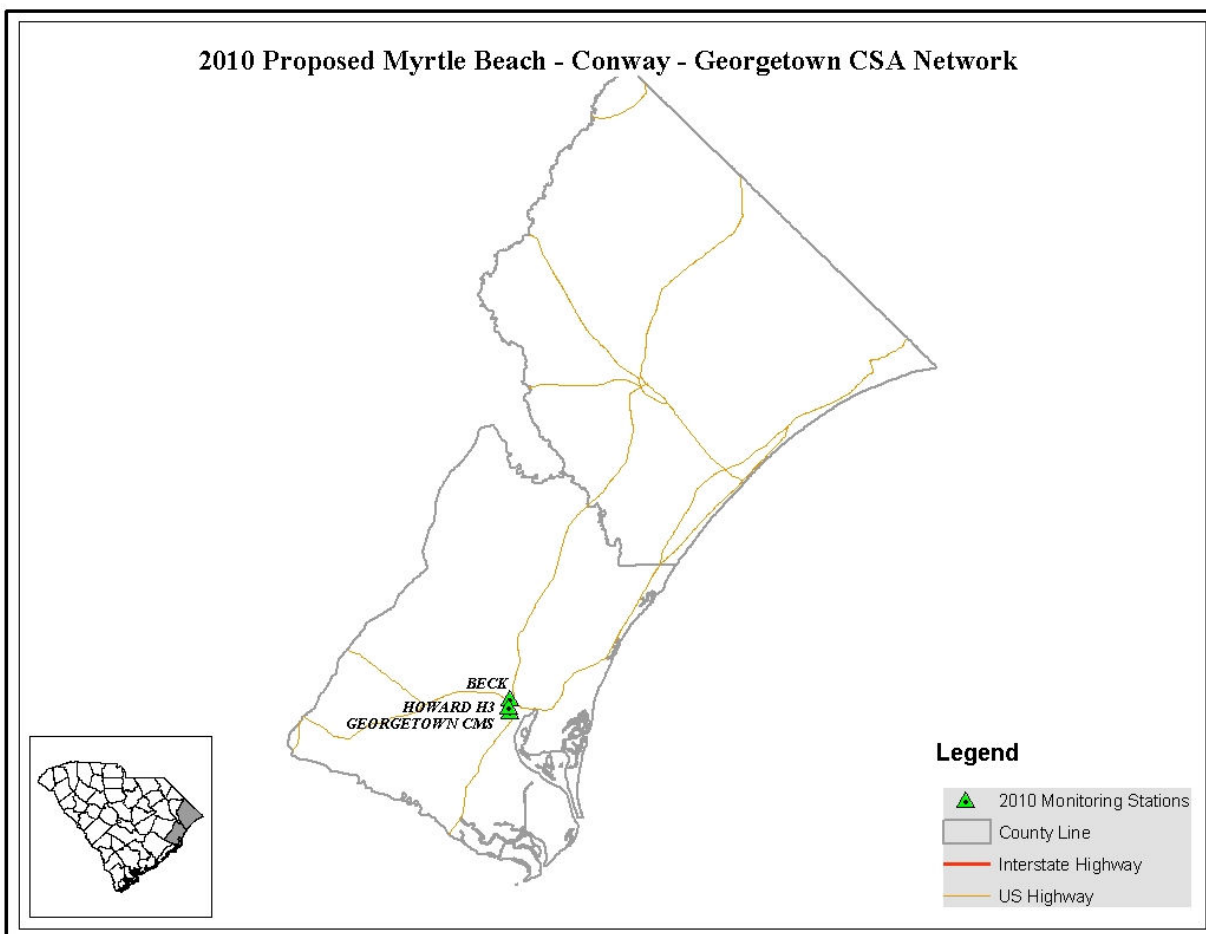
Changes for 2010

No changes are planned for 2010.

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|------------------------|-------|-------------------|----------------|------------------|---|--------------------|
| Ozone | Urban | Upwind Background | SLAMS | 3.3 | FEM Ultraviolet Photometry | Continuous |
| Wind Speed / Direction | | Local Conditions | Non-regulatory | 10.0 | Instruments for wind speed, wind direction. | Continuous |

Myrtle Beach-Conway-Georgetown CSA



Classification of monitoring type by site

| AIRS ID | Site Name | PM _{2.5} | PM _{2.5} Cont. | Speciation | PM ₁₀ | PM _{10-2.5} | Lead | O ₃ | SO ₂ | NO ₂ | CO | Sulfate | BC | Carbonyls | SVOC | VOCs | Mercury | Acid Rain | MET |
|--|-----------------------|-------------------|-------------------------|------------|------------------|----------------------|------|----------------|-----------------|-----------------|----|---------|----|-----------|------|------|---------|-----------|-----|
| 45-043-0006 | Georgetown CMS | | | | ○ | | | | | | | | | | | | | | ○○ |
| 45-043-0011 | Howard High School #3 | | | | ○ | | | | | | | | | | | | | | |
| 45-043-0012 | Beck Administration | | | | ○ | | | | | | | | | | | | | | |
| | TOTAL | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| ○ SPM / Other ● SLAMS ●● indicates duplicate QA monitors | | | | | | | | | | | | | | | | | | | |

Georgetown CMS

CSA/MSA: Myrtle Beach-Conway-Georgetown CSA

AQS Site ID: 45-043-0006

Location: 1369 Dock Street

County: Georgetown

Coordinates: +33.362014, -79.394251

Date Established: October 25, 1972

Site Evaluation: The most recent site evaluation was conducted on April 2, 2007.



The Georgetown CMS site is located in Georgetown County. Georgetown CMS is located in an industrial area dominated by point sources and is not intended to represent PM₁₀ concentrations in populated areas. The sample inlets are 21 meters from the nearest road.

The site is located in very close proximity to several local sources (e.g., truck parking, material handling and road dust), and not located near inhabited buildings or locations where the general public can be expected to be located. The Department has determined that due to the restricted nature of the area, data

collected from Georgetown CMS is not appropriate for comparison to the NAAQS. The Georgetown CMS site has continuous monitoring for meteorology and PM₁₀.

Previous monitoring in the local residential areas at the Maryville, Howard High and Winyah sites have confirmed this location is representative of no more than middle scale.

Alternative methods for PM₁₀ monitoring will continue to be explored. When an adequate alternative method is selected and installed, the continuous PM₁₀ monitor will be removed from this site. If an alternative method is not identified, the particulate monitoring appropriately designated special purpose for this limited area will be maintained to meet needs related to potential impacts of the local industrial activity.

Changes for 2010

No changes are planned for 2010.

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|-----------------------|--------|---------------------------------------|----------------|------------------|---|--------------------|
| PM ₁₀ | Middle | Source Oriented Highest Concentration | SPM | 4.0 | FEM TEOM | Continuous |
| Wind Speed/ Direction | | Local Conditions | Non-regulatory | 10.0 | Instruments for wind speed and wind direction | Continuous |
| Precipitation | | Local Conditions | Non-regulatory | | Tipping Bucket | Continuous |

Howard High School #3

CSA/MSA: Myrtle Beach-Conway-Georgetown CSA

AQS Site ID: 45-043-0011

Location: S. Kaminski Street

County: Georgetown

Coordinates: 33.369,-79.297

Date Established: July, 15 2008

Site Evaluation: pending



This site is a replacement site for Howard High #2. The shift to the new site was necessitated by the change in land use directly adjacent to Howard High #2. The relocation allowed the Department to continue the data record in a populated area adjacent to an industrialized area. Howard High School #3 better meets siting criteria and is representative of PM₁₀ concentrations in populated areas. This site represents a continuation of PM₁₀ monitoring in this area of Georgetown that has been ongoing since 1970 with the establishment of the original Howard High site.

Changes for 2010

No changes are planned for 2010.

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|------------------|--------------|---|-------------|------------------|-----------------|--------------------|
| PM ₁₀ | Neighborhood | Population Exposure Highest Concentration | SPM | 2.0 | TEOM | Continuous |

Beck Administration Center**CSA/MSA:** Myrtle Beach-Conway-Georgetown CSA**AQS Site ID:** 45-043-0012**Location:** 2018 Church Street**County:** Georgetown**Coordinates:** 33.383, -79.294**Date Established:** July, 23, 2008**Site Evaluation:** pending

The Beck Administration Center site is located in Georgetown County in the city of Georgetown. This site was established with cooperation with local stakeholders to represent local concentrations of PM_{10} and provide context for other monitoring in the town of Georgetown. The Beck Administration Center site has continuous PM_{10} monitoring.

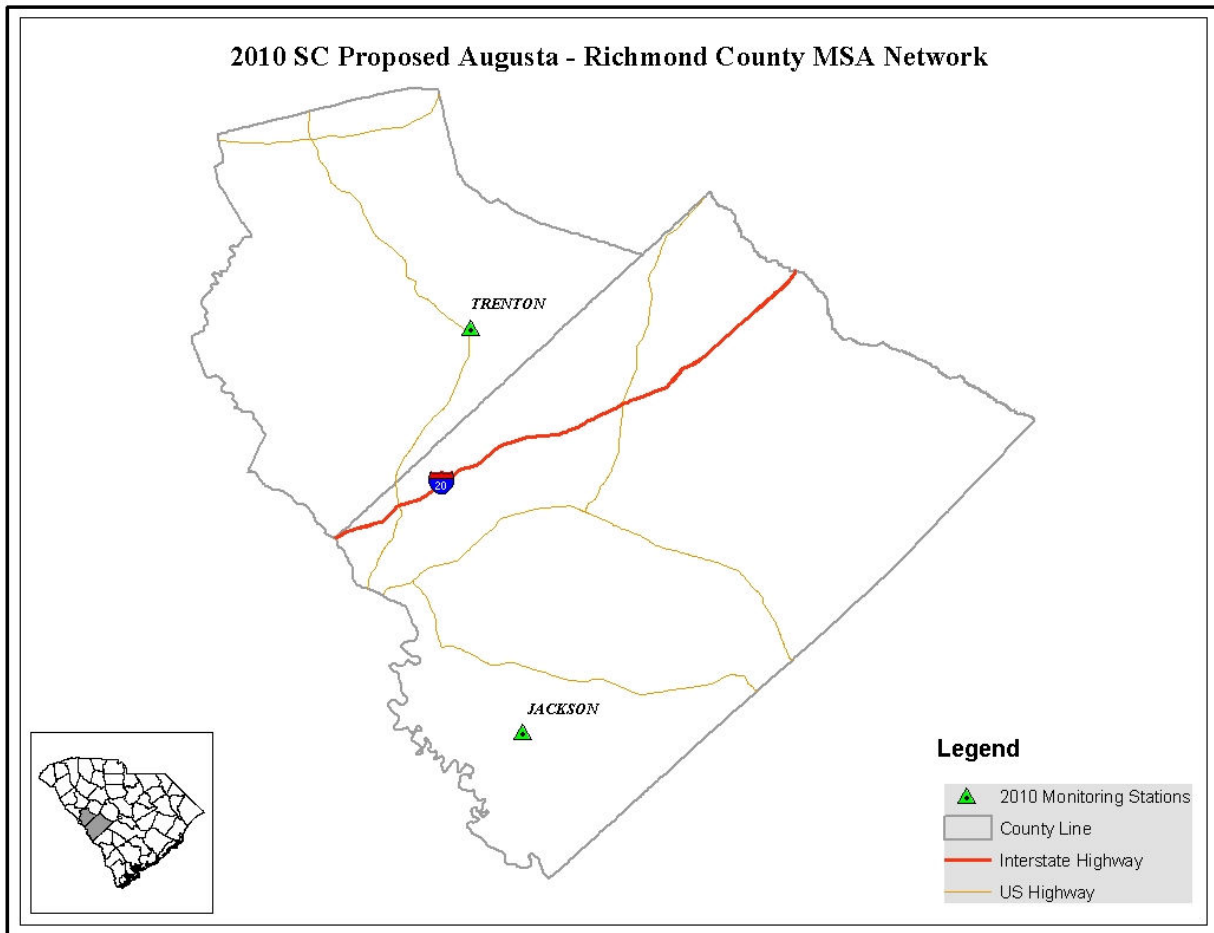
Changes for 2010

No changes are planned for 2010.

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|-----------|--------------|---------------------|-------------|------------------|-----------------|--------------------|
| PM_{10} | Neighborhood | Population Exposure | SPM | 3.0 | TEOM | Continuous |

Augusta-Richmond County MSA (part)



Classification of monitoring type by site

| AIRS ID | Site Name | PM _{2.5} | PM _{2.5} Cont. | Speciation | PM ₁₀ | PM _{10-2.5} | Lead | O ₃ | SO ₂ | NO ₂ | CO | Sulfate | BC | Carbonyls | SVOC | VOCs | Mercury | Acid Rain | MET |
|--|-----------------------|-------------------|-------------------------|------------|------------------|----------------------|------|----------------|-----------------|-----------------|----|---------|----|-----------|------|------|---------|-----------|-----|
| 45-003-0003 | Jackson Middle School | | | | | | | ● | | | | | | | | | | | |
| 45-037-0001 | Trenton | ○ | ○ | | | | | ● | | | | | | | | | | | |
| | TOTAL | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ○ SPM / Other ● SLAMS ●● indicates duplicate QA monitors | | | | | | | | | | | | | | | | | | | |

Jackson Middle School**CSA/MSA:** Augusta-Richmond County MSA**AQS Site ID:** 45-003-0003**Location:** 8217 Atomic Road**County:** Aiken**Coordinates:** +33.342226, -81.788731**Date Established:** October 24, 1985**Site Evaluation:** The most recent site evaluation was conducted on June 14, 2006.

The Jackson Middle School site is located in southwestern Aiken County at the Jackson Middle School. Jackson is located in a suburban setting to monitor concentrations upwind of the Augusta urbanized area. The sample inlet is 138.8 meters from the nearest road.

Changes for 2010

No changes are planned for 2010.

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|-----------|-------|-------------------|-------------|------------------|----------------------------|--------------------|
| Ozone | Urban | Upwind Background | SLAMS | 4.0 | FEM Ultraviolet Photometry | Continuous |

Trenton

CSA/MSA: Augusta-Richmond County MSA

AQS Site ID: 45-037-0001

Location: 660 Woodyard Road (Hwy 121)

County: Edgefield

Coordinates: +33.739963, -81.853635

Date Established: March 28, 1980

Site Evaluation: The most recent site evaluation was conducted on March 18, 2003.



The Trenton site is located in southeastern Edgefield County. Trenton was originally placed in this area to monitor for ozone crossing into South Carolina from Georgia. The Trenton site has both FRM and continuous monitoring for PM_{2.5}. The sample inlets are 39.4 meters from the nearest road.

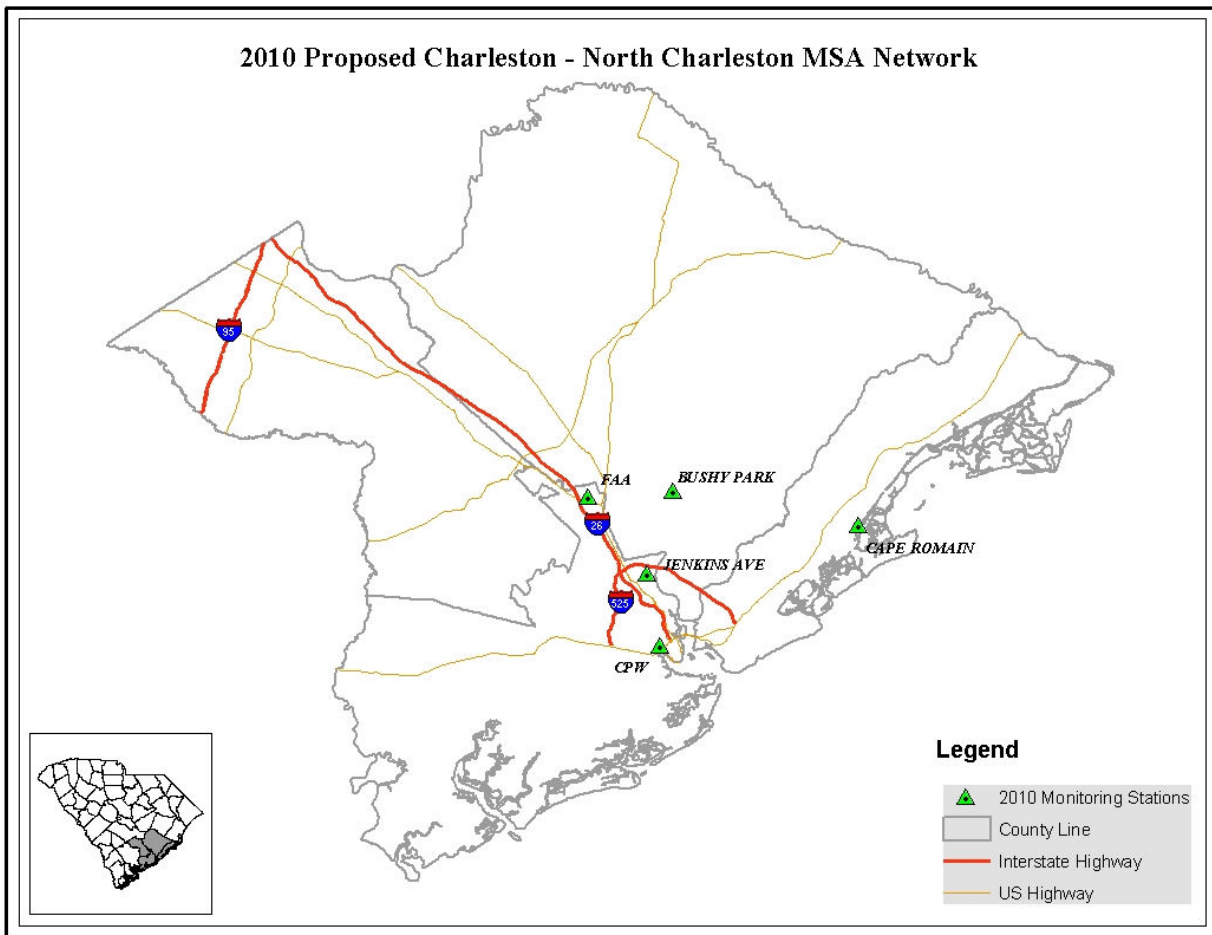
Changes for 2010

No changes are planned for 2010

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|------------------------------|-------|--|-------------|------------------|----------------------------|--------------------|
| PM _{2.5} | Urban | Extreme Downwind | SPM | 4.5 | Gravimetric | 1:3 |
| Continuous PM _{2.5} | Urban | Extreme Downwind | SPM | 1.8 | TEOM 50°C | Continuous |
| Ozone | Urban | Highest Concentration / Extreme Downwind | SLAMS | 3.6 | FEM Ultraviolet Photometry | Continuous |

Charleston-North Charleston MSA



Classification of monitoring type by site

| AIRS ID | Site Name | PM _{2.5} | PM _{2.5} Cont. | Speciation | PM ₁₀ | PM _{10-2.5} | Lead | O ₃ | SO ₂ | NO ₂ | CO | Sulfate | BC | Carbonyls | SVOC | VOCs | Mercury | Acid Rain | MET |
|--|---------------------------|-------------------|-------------------------|------------|------------------|----------------------|------|----------------|-----------------|-----------------|----|---------|----|-----------|------|------|---------|-----------|-----|
| 45-015-0002 | Bushy Park Pump Station | | | | | | | ● | | | | | | | | | | | |
| 45-019-0003 | Jenkins Ave. Fire Station | | | | ● | | ● | | ○ | ○ | | | | | | | | | |
| 45-019-0046 | Cape Romain | | ○ | ○ | | | | ● | ○ | ○ | ○ | ○ | ○ | | | | | | ○ |
| 45-019-0048 | FAA | ○○ | | | | | | | | | | | | | | | | | |
| 45-019-0049 | Charleston Public Works | ● | ● | ○ | | | | | | | | | | | | | | | |
| | TOTAL | 3 | 2 | 2 | 1 | 0 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| ○ SPM / Other ● SLAMS ●● indicates duplicate QA monitors | | | | | | | | | | | | | | | | | | | |

Bushy Park Pump Station

CSA/MSA: Charleston-North Charleston MSA

AQS Site ID: 45-015-0002

Location: 1530 Bushy Park Road (Goose Creek)

County: Berkeley

Coordinates: +32.987252, -79.936700

Date Established: June 20, 1978

Site Evaluation: The most recent site evaluation was conducted on March 17, 2003.



The Bushy Park Pump Station site is located in southeastern Berkeley County downwind from the Charleston urban area. The sample inlets are 11.3 meters from the nearest road.

Changes for 2010

No changes are planned for 2010.

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|-----------|-------|-------------------------|-------------|------------------|----------------------------|--------------------|
| Ozone | Urban | Max Ozone Concentration | SLAMS | 3.0 | FEM Ultraviolet Photometry | Continuous |

Jenkins Ave. Fire Station

CSA/MSA: Charleston-North Charleston MSA

AQS Site ID: 45-019-0003

Location: 4830 Jenkins Ave.

County: Charleston

Coordinates: +32.882289, -79.977538

Date Established: February 14, 1969

Site Evaluation: The most recent site evaluation was conducted on March 2, 2005.



The Jenkins Ave. Fire Station site is located in the city of North Charleston. The site is located in an urban and center city setting. The Jenkins Ave. Fire Station site monitors PM₁₀, SO₂ and NO₂. The sample inlets are 9.6 meters from the nearest road.

Changes for 2010

Lead sampling will begin by January 1, 2010.

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|------------------|--------------|---------------------------------------|-------------|------------------|-----------------------|--------------------|
| PM ₁₀ | Neighborhood | Highest Concentration | SLAMS | 4.3 | FEM TEOM | Continuous |
| Lead | Neighborhood | Population Exposure | SLAMS | | ICP | 1:6 |
| SO ₂ | Neighborhood | Population Exposure | SPM | 4.3 | FEM UV Fluorescence | Continuous |
| NO ₂ | Neighborhood | Highest Concentration Source Oriented | SPM | 4.3 | FRM Chemiluminescence | Continuous |

Cape Romain

CSA/MSA: Charleston-North Charleston MSA

AQS Site ID: 45-019-0046

Location: 390 Bulls Island Road (Awendaw)

County: Charleston

Coordinates: +32.941023, -79.657187

Date Established: July 11, 1983

Site Evaluation: The most recent site evaluation was conducted on June 3, 2005.



The Cape Romain site is located in Charleston County at the Cape Romain National Wildlife Refuge (NWR) near Moores Landing.

The Cape Romain NWR is a Class I area about 20 miles northeast of Charleston. The majority of the Refuge area is offshore extending from Bull Island 20 miles northeast to Cape Romain. The Refuge is bordered on the west by the Intracoastal Waterway. Inland are large tracts of forests with scattered residences. Several miles inland a primary coastal route, US Highway 17, parallels the coast, with some development along

the section of highway that is closest to the Refuge.

The Cape Romain site has samplers for PM_{2.5} speciation and continuous monitors for CO, SO₂, NO₂, ozone, black carbon, meteorological parameters and PM_{2.5}. The sample inlets are 18 meters from the nearest road.

The Cape Roman site is collocated with the Interagency Monitoring of Protected Visual Environments (IMPROVE) sampling site and nearby monitoring performed by other agencies includes precipitation chemistry and mercury deposition. The site has been used for multiple interagency and regional air monitoring projects.

Changes for 2010

Sulfate monitoring will be established at this site in 2010.

Monitors:

(Table continues on next page)

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|-----------------------------|----------|--------------------|-------------|------------------|----------------------------|--------------------|
| PM _{2.5} | Urban | General Background | SPM | 3.0 | TEOM 30°C | Continuous |
| Speciated PM _{2.5} | Urban | Visibility | IMPROVE | 3.0 | IMPROVE protocol | 1:3 |
| Ozone | Regional | General Background | SLAMS | 4.0 | FEM Ultraviolet Photometry | Continuous |
| SO ₂ | Regional | Source Oriented | SPM | 4.0 | FEM UV Fluorescence | Continuous |
| NO ₂ | Regional | General | SPM | 4.0 | FRM | Continuous |

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|------------------------|----------|--------------------|----------------|------------------|---|--------------------|
| | | Background | | | Chemiluminescence | |
| CO | Urban | General Background | SPM | 4.0 | FRM Nondispersive Infrared | Continuous |
| Sulfate | Regional | General Background | Non-regulatory | 4.0 | Catalytic thermal reduction / Pulsed fluorescence | Continuous |
| Black Carbon | Regional | General Background | Non-regulatory | 4.0 | Optical absorption | Continuous |
| Wind Speed / Direction | | Local Conditions | Non-regulatory | 10.0 | Instruments for wind speed, and direction and precipitation | Continuous |

FAA**CSA/MSA:** Charleston-North Charleston MSA**AQS Site ID:** 45-019-0048**Location:** 2670 Elms Plantation Blvd**County:** Charleston**Coordinates:** +32.980254, -80.065010**Date Established:** April 9, 1999**Site Evaluation:** The most recent site evaluation was conducted on May 4, 2006.

The Charleston FAA Beacon site is located in Charleston County approximately five miles northwest of the Charleston International Airport near Charleston Southern University. This site has collocated PM_{2.5} samplers. The sample inlets are 50 meters from the nearest road.

Changes for 2010

No changes are planned for 2010.

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|------------------------------|--------------|---------------------|---------------|------------------|-----------------|--------------------|
| PM _{2.5} | Neighborhood | Population Exposure | SPM | 2.3 | FRM Gravimetric | 1:1 |
| Collocated PM _{2.5} | Neighborhood | Population Exposure | QA Collocated | 2.3 | FRM Gravimetric | 1:6 |

Charleston Public Works

CSA/MSA: Charleston-North Charleston MSA

AQS Site ID: 45-019-0049

Location: 360 Fishburne Street

County: Charleston

Coordinates: +32.790984, -79.958694

Date Established: November 20, 1998

Site Evaluation: The most recent site evaluation was conducted on April 24, 2006.



The Charleston Public Works (CPW) site is located on the western side of the Charleston peninsula near downtown Charleston. In addition to the PM_{2.5} sampler, CPW has a PM_{2.5} speciation sampler that is the South Carolina station for the national Speciation Trends Network (STN). The CPW site supports the required collocated PM_{2.5} continuous monitor for the MSA. The sample inlets are 28 meters from the nearest road.

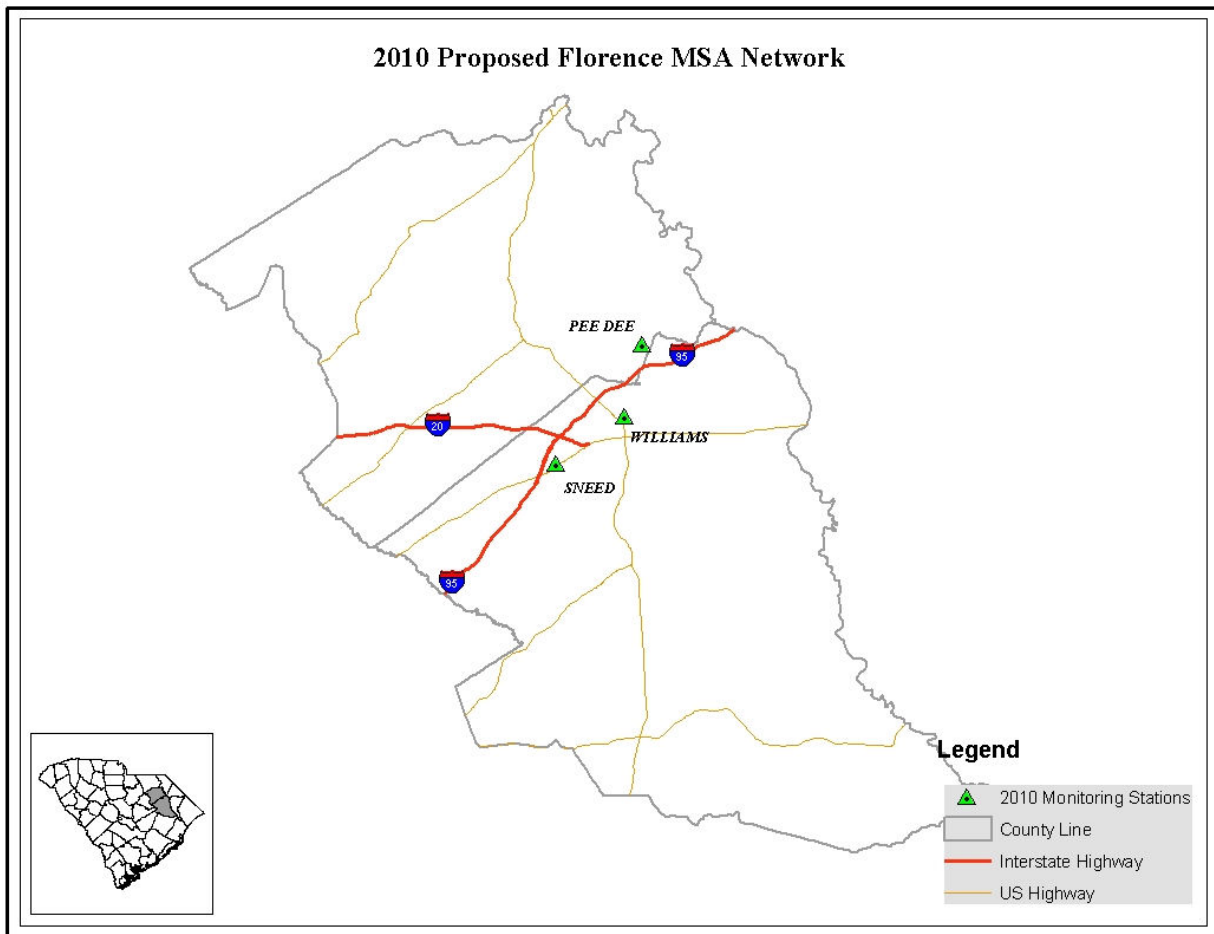
Changes for 2010

No changes are planned for 2010.

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|-----------------------------|--------------|---------------------|-------------|------------------|--|--------------------|
| PM _{2.5} | Neighborhood | Population Exposure | SLAMS | 2.4 | Gravimetric | 1:1 |
| PM _{2.5} | Neighborhood | Population Exposure | SLAMS | 3.0 | TEOM | Continuous |
| Speciated PM _{2.5} | Neighborhood | Population Exposure | SPM | 2.4 | Energy dispersive XRF, Ion chromatography, STN TOT | 1:3 |

Florence MSA



Classification of monitoring type by site

| AIRS ID | Site Name | PM _{2.5} | PM _{2.5} Cont | Speciation | PM ₁₀ | PM _{10-2.5} | Lead | O ₃ | SO ₂ | NO ₂ | CO | Sulfate | BC | Carbonyls | SVOC | VOCs | Mercury | Acid Rain | MET |
|--|------------------------|-------------------|------------------------|------------|------------------|----------------------|------|----------------|-----------------|-----------------|----|---------|----|-----------|------|------|---------|-----------|-----|
| 45-031-0003 | Pee Dee Exp. Station | | | | | | | ● | | | | | | | | | | | |
| 45-041-0002 | HL Sneed Middle School | ● | | | | | | | | | | | | | | | | | |
| 45-041-0003 | Williams Middle School | ○ | ○ | | | | | | | | | | | | | | | | |
| | TOTAL | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ○ SPM / Other ● SLAMS ●● indicates duplicate QA monitors | | | | | | | | | | | | | | | | | | | |

Pee Dee Experimental Station

CSA/MSA: Florence MSA

AQS Site ID: 45-031-0003

Location: 2200 Pocket Road (Darlington)

County: Darlington

Coordinates: +34.285696, -79.744859

Date Established: February 25, 1993

Site Evaluation: The most recent site evaluation was conducted on March 14, 2006.



The Pee Dee Experimental Station site is located in northeastern Darlington County. This site serves as the required ozone monitor in the Florence MSA. The sample inlets are 91 meters from the nearest road.

Changes for 2010

No changes are planned for 2010.

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|-----------|-------|-------------------------|-------------|------------------|----------------------------|--------------------|
| Ozone | Urban | Max Ozone Concentration | SLAMS | 3.0 | FEM Ultraviolet Photometry | Continuous |

H L Sneed Middle School

CSA/MSA: Florence MSA

AQS Site ID: 45-041-0002

Location: 3300 Thornblade Drive

County: Florence

Coordinates: +34.167636, -79.850404

Date Established: January 15, 1999

Site Evaluation: The most recent site evaluation was conducted on March 16, 2006.



The H L Sneed Middle School site is located in Florence County approximately 2 miles SSW of the I-20/I-95 interchange. The site was established to represent population exposure to PM_{2.5} concentrations on the neighborhood scale. The site is located on the edge of the Florence urban area. The sample inlets are 70 meters from the nearest road. Recent changes to monitoring regulations specified that at least one PM_{2.5} site in each MSA was required to have continuous monitoring for public notification. The H L Sneed Middle School site was not large enough to house both the FRM and continuous monitors.

A potential replacement site has been established in Florence County. Within the next 12 months, the Department will have collected one year's worth of concurrent data from the Williams Middle School site, and will evaluate and determine if relocation is appropriate.

Changes for 2010

No changes are planned for 2010.

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|-------------------|--------------|---------------------|-------------|------------------|-----------------|--------------------|
| PM _{2.5} | Neighborhood | Population Exposure | SLAMS | 2.5 | FRM Gravimetric | 1:3 |

Williams Middle School**CSA/MSA:** Florence MSA**AQS Site ID:** 45-041-0003**Location:** 1119 N. Irby Street**County:** Florence**Coordinates:** 34.214, -79.767**Date Established:** August 4, 2008**Site Evaluation:** pending

The Florence MSA requires one PM_{2.5} sampler in a population oriented area of expected maximum concentration. A collocated continuous monitor is also required to provide timely reporting of concentrations to the public.

The Department established the Williams site to meet the 40 CFR Part 58 Appendix D requirements for objective and collocated continuous monitoring and reporting. If the site meets the monitoring objectives, the Department will recommend to EPA discontinuing monitoring at the H L Sneed Middle School site.

Changes for 2010

No changes are planned for 2010

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|------------------------------|--------------|---|-------------|------------------|-----------------|--------------------|
| PM _{2.5} | Neighborhood | Population Exposure Highest Concentration | SPM | 2.5 | FRM Gravimetric | 1:3 |
| Continuous PM _{2.5} | Neighborhood | Population Exposure Highest Concentration | SPM | 3.0 | TEOM | Continuous |

Remainder of State

Classification of monitoring type by site

| AIRS ID | Site Name | PM _{2.5} | PM _{2.5} Cont. | Speciation | PM ₁₀ | PM _{10-2.5} | Lead | O ₃ | SO ₂ | NO ₂ | CO | Sulfate | BC | Carbonyls | SVOC | VOCs | Mercury | Acid Rain | MET |
|--|--------------|-------------------|-------------------------|------------|------------------|----------------------|------|----------------|-----------------|-----------------|----|---------|----|-----------|------|------|---------|-----------|-----|
| 45-001-0001 | Due West | | | | | | | ● | | | | | | | | | | ○ | ○ |
| 45-025-0001 | Chesterfield | ● | ○ | ○ | ○○ | | | ○ | | | | | ○ | ○ | ○ | ○ | | | ○ |
| 45-029-0002 | Ashton | | ○ | | | | | ○ | | | | | | | | | | | |
| | TOTAL | 1 | 2 | 1 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 2 |
| ○ SPM / Other ● SLAMS ●● indicates duplicate QA monitors | | | | | | | | | | | | | | | | | | | |

Due West**CSA/MSA:** None**AQS Site ID:** 45-001-0001**Location:** 59 Jim Scott Lane**County:** Abbeville**Coordinates:** +34.325318, -82.386376**Date Established:** April 2, 1991**Site Evaluation:** The most recent site evaluation was conducted on June 27, 2006.

The Due West site is located in northeastern Abbeville County. In addition to monitoring for ozone, Due West has a monitor for precipitation and a sampler for acid precipitation.

The sample inlets are 76 meters from the nearest road.

Changes for 2010

No changes are planned for 2010.

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|---------------|--------------|----------------------|----------------|------------------|----------------------------|--------------------|
| Ozone | Urban | General / Background | SLAMS | 4.0 | FEM Ultraviolet Photometry | Continuous |
| Acid Rain | Neighborhood | Trends | Non-regulatory | 1.5 | IC | Weekly |
| Precipitation | Neighborhood | Local Conditions | Non-regulatory | 3.0 | Tipping bucket | Continuous |

Chesterfield

CSA/MSA: None

AQS Site ID: 45-025-0001

Location: SC145, McBee (Rt 2 Box 100)

County: Chesterfield

Coordinates: +34.615367, -80.198787

Date Established: January 6, 2000

Site Evaluation: The most recent site evaluation was conducted on April 21, 2003.



The Chesterfield site is located in the central part of Chesterfield County. The Chesterfield site has continuous monitors for black carbon, PM_{2.5}, ozone and meteorological parameters. Sampling is done for PM_{2.5} and PM₁₀. In addition to the STN protocol PM_{2.5} speciation sampling, this site also is a precision site with collocated FRM samplers for PM_{2.5}, and PM₁₀. The sample inlets are 45 meters from the nearest road. The Chesterfield site is a Rural National Air Toxics Trends Site (NATTS) which includes carbonyls, VOC, SVOC and metals sampling.

This site is proposed to the EPA as a possible rural NCore site.

Changes for 2010

No changes are planned for 2010.

Monitors:

(Table continues on next page)

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|------------------------------|----------|----------------------|--------------------------|------------------|--|--------------------|
| PM _{2.5} | Regional | Regional Transport | SLAMS | 3.0 | FRM Gravimetric | 1:3 |
| Continuous PM _{2.5} | Regional | Regional Transport | SPM | 3.0 | TEOM – 50° C | Continuous |
| Speciated PM _{2.5} | Regional | Regional Transport | Supplementary speciation | 3.0 | Energy dispersive XRF, Ion chromatography, STN TOT | 1:6 |
| PM ₁₀ | Regional | General / Background | SPM | 3.0 | Gravimetric ICP/MS | 1:6 |
| Collocated PM ₁₀ | Regional | General / Background | QA Collocated | 3.0 | Gravimetric | 1:6 |
| Ozone | Regional | General / Background | SPM | 2.0 | FEM Ultraviolet Photometry | Continuous |
| Black Carbon | Regional | General / Background | Non-regulatory | 4.5 | Optical absorption | 5 minutes |

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|----------------------------|----------|------------------|----------------|------------------|--|--------------------|
| Carbonyls | Regional | NATTS | Non-regulatory | 3.0 | DNPH/IC | 1:6 |
| Semi-volatiles | Regional | NATTS | Non-regulatory | 3.0 | PUF/GCMS | 1:6 |
| Volatile Organic Compounds | Regional | NATTS | Non-regulatory | 3.0 | Canister/GCMS | 1:6 |
| Wind speed / direction | | Local Conditions | Non-regulatory | 10.0 | Instruments for wind speed and direction | Continuous |

Ashton**CSA/MSA:** None**AQS Site ID:** 45-029-0002**Location:** Ashton Road (S-13-18)**County:** Colleton**Coordinates:** +33.007866 -80.965038**Date Established:** March 7, 1990**Site Evaluation:** The most recent site evaluation was conducted on April 18, 2005.

The Ashton site is located in northwestern Colleton County. The site was established as a general/background location on 03/07/1990. In addition to monitoring ozone, the Ashton site also monitors PM_{2.5} concentrations. The sample inlets are 8 meters from the nearest road.

Changes for 2010

No changes are planned for 2010.

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|------------------------------|----------|----------------------|-------------|------------------|----------------------------|--------------------|
| Continuous PM _{2.5} | Regional | General / Background | SPM | 4.0 | TEOM 50°C | Continuous |
| Ozone | Urban | General / Background | SPM | 4.0 | FEM Ultraviolet Photometry | Continuous |

Network Development

The South Carolina Ambient air Monitoring Network provides data to support an array of decisions ranging from development of emissions strategies to protect and improve air quality to the level of activity appropriate for individuals in sensitive populations. To support these varied data users, the network must provide both stable long term measures to document trends and rapid reporting of conditions to the public. In response to land use, population and urban areas growth, the network must be evaluated and adjusted to meet the changing conditions and needs.

The network described in this plan continues to build upon a significant transition from the network that has evolved over the last thirty-five years. It reflects the successes in reducing ambient concentrations of Total Suspended Particulate, lead, carbon monoxide, nitrogen oxides and sulfur dioxide and the increasing concern about the impact of fine particles and ozone on public health.

As resources become available and after the extra monitoring needed in this transition is completed, a series of studies are planned for the major urban areas to gain better understanding of the air quality and provide information to improve the monitoring network. In addition to the intensive studies that provide a detailed 'snapshot,' it is intended that SPM sites be established and monitored in rotation to provide regular checks and long term tracking of the trends in air quality in all areas of the state including smaller cities, towns and rural areas. The implementation of this long term strategy will be developed during this transition and implemented as resources again become available. Project plans will be developed for the monitoring and data analysis activity to better define the scope of these strategies prior to implementation. These studies are long term evaluations the Department has identified for several years and are important for evaluating and improving our knowledge of air quality in the State. However, current budget issues and lack of additional federal funding has led to a high level of uncertainty and makes planning of implementation schedules highly uncertain. The Department will begin the process of evaluating and prioritizing each of the studies listed below as resources once again become available.

Areas where long term strategies are being considered include:

- Columbia MSA Ozone Study - addition of supplementary SPM ozone sites to investigate variability and refine monitoring network to meet objectives.
- Columbia MSA Particulate Surveillance - rotation of SPM PM_{2.5} sites through areas with higher rates of growth and changes in land use to determine trends and identify areas of concern (Parklane, Sandhill, and potentially Lower Richland, Lexington and Chapin).
- Aiken MSA Ozone Study - addition of supplementary SPM ozone site to investigate proper size of the network appropriate to represent the MSA and to monitor trends in rural areas between the North Augusta-Aiken area and Columbia.
- Aiken MSA Particulate Study – investigation of PM_{2.5} concentrations in North Augusta and Aiken along with existing rural data to determine population exposure and possible need for monitoring of mass or the components of particulate to assist in area air quality improvement efforts.
- Charleston-North Charleston MSA Ozone Study - investigation of more appropriate location for the MSA maximum ozone concentration site.
- Charleston-North Charleston Particulate Project - multi-objective investigation to identify a single site to potentially replace FAA and CPW and establish current baseline concentrations and particulate matter concentrations in populated areas.
- York County Ozone Study - limited investigation of ozone population exposure, spatial variability and transport to supplement existing North and South Carolina monitoring. This study

is necessary because of siting issues and lack of long term commitment at the current York CMS monitoring site.

DRAFT

Sites Discontinued for 2010

Monitoring will be discontinued in 2009 at the following locations.

| Site | ID | Parameters | Date Established | Notes |
|-----------------------|-------------|------------|------------------|---|
| Greenville MSA | | | | |
| Greenville CHD | 45-045-0008 | All | 4/6/1989 | Site parameters being relocated to the Greenville ESC (45-045-0015) site. |
| Olympia | 45-079-0018 | All | 10/10/1991 | Site no longer meets original site objectives. |

Greenville County Health Department

CSA/MSA: Greenville-Spartanburg-Anderson CSA / Greenville MSA

AQS Site ID: 45-045-0008

Location: 91 Wakefield Street, Greenville, SC, 29601

County: Greenville

Coordinates: +34.838814, -82.402918

Date Established: April 6, 1989

Site Evaluation: The most recent site evaluation was conducted on March 30, 2005.



This monitoring site is located on the grounds of the Greenville County Health Department. The Greenville County Health Department (CHD) site is located approximately 2 km (1 mile) south of downtown Greenville. The Greenville County Health Department site has samplers for PM_{2.5}. This site also has continuous monitors for NO₂ and CO, Black Carbon (LAC), sulfate, and speciated PM_{2.5}. The site supports the required collocated PM_{2.5} continuous monitor for the MSA. Data from the continuous monitor cannot be used for comparison to the PM_{2.5} NAAQS. The sample inlets are 23.2 meters from the nearest road. This site was one of three sites representing the Greenville-

Spartanburg Monitoring Planning Area for PM_{2.5}.

The Department established a new site (Greenville ESC) in the downtown Greenville area which better meets suggested PM_{2.5} siting criteria. Once the data has been demonstrated to meet the monitoring objectives, the Department will relocate some or all of the monitoring activity to the more appropriate location.

The criteria pollutants NO₂ and CO will continue to be monitored at this location to provide fine particulate and ozone precursor data and data to support modeling. Facilities wishing to make modifications or build new plants are required to model for criteria pollutants and the Greenville data will provide a conservative estimate of ambient concentrations in the Upstate.

Changes for 2010

At the conclusion of the one year study period a statistical comparison of data collected at Greenville CHD and Greenville ESC was undertaken. PM_{2.5} concentrations at both sites were similar throughout the study, with a correlation coefficient of 0.961. This high of a correlation coefficient suggests that both sites measured similar concentrations. With suggested siting conditions better met at the Greenville ESC site, the Department has concluded that the Greenville ESC site is the more appropriate location to represent PM_{2.5} concentrations in the downtown Greenville area. The Department requests that EPA concur with this finding and allow the Greenville ESC site to become the second required SLAMS site for PM_{2.5} in the Greenville MSA. It is anticipated that all parameters at the Greenville CHD site will be terminated in 2009.

Monitors:

(Table continues on next page)

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|-------------------|--------------|---------------------|-------------|------------------|-----------------|--------------------|
| PM _{2.5} | Neighborhood | Population Exposure | SLAMS | 4.0 | FRM Gravimetric | 1:1 |

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|-----------------------------|--------------|--|--------------------------|------------------|--|--------------------|
| PM _{2.5} | Neighborhood | Population Exposure/ General Background | SLAMS | 4.5 | TEOM-FDMS (includes measurement of volatile PM _{2.5}) | Continuous |
| Speciated PM _{2.5} | Neighborhood | Population Exposure | Supplementary speciation | 4.5 | STN Protocol | 1:6 |
| Nitrogen Dioxide | Neighborhood | Population Exposure/ Max Precursor Impact | SPM | 4.0 | FRM Chemiluminescence | Continuous |
| Carbon Monoxide | Middle | Max Precursor Impact | SPM | 4.0 | FRM Nondispersive Infrared Photometry | Continuous |
| Sulfate | Neighborhood | Population Exposure / General Background | Non-regulatory | 4.5 | Catalytic thermal reduct/Pulsed fluorescence | Continuous |
| Black Carbon | Neighborhood | Population Exposure / General Background | Non-regulatory | 4.5 | Optical absorption | Continuous |

Olympia

CSA/MSA: Columbia-Newberry CSA / Columbia MSA

AQS Site ID: 45-079-0018

Location: Heyward Street and Williams Street

County: Richland

Coordinates: +33.982253, -81.040235

Date Established: October 10, 1991

Site Evaluation: The most recent site evaluation was conducted on February 3, 2006.



This site was established as a source-oriented monitor on 10/10/1991 to measure impacts on residential areas from traffic related to a nearby quarry. The sample inlet is 9.1 meters from the nearest road.

In 2005, traffic exiting the quarry was rerouted away from the populated areas. No increased PM_{10} values have been observed at this location since the rerouting of traffic. The Department has concluded that the current location of the Olympia monitoring station does not meet the objectives originally established for this site and will terminate the site at the end of 2009.

Changes for 2010

This site will be discontinued at the end of 2009.

Monitors:

| Parameter | Scale | Objective | Designation | Probe Height (m) | Analysis Method | Sampling Frequency |
|-----------|--------------|-----------------|-------------|------------------|-----------------|--------------------|
| PM_{10} | Neighborhood | Source Oriented | SPM | 4.5 | TEOM | Continuous |

APPENDIX A: Errata

This section will list corrections to the 2010 Monitoring Plan that may arise after submittal to the EPA. The updated plan along with this errata sheet will be posted to the Department's webpage.

| Date | Item |
|------|------|
| | |

DRAFT

Description of Proposed Urban National Core (NCore) Monitoring Station

Columbia - Newberry

CBSA

South Carolina

within the Columbia MSA

**South Carolina Department of Health and
Environmental Control**

**2600 Bull Street
Columbia, SC 29201**

National Core (NCore) Multi-pollutant Monitoring Stations:

In October 2006 the United States Environmental Protection Agency (EPA) issued final amendments to the ambient air monitoring regulations for criteria pollutants. These amendments are codified in 40 CFR parts 53 and 58. The purpose of the amendments was to enhance ambient air quality monitoring to better serve current and future air quality needs. One of the most significant changes in the regulations was the requirement to establish National Core (NCore) multi-pollutant monitoring stations. These stations will provide data on several pollutants at lower detection limits and replace the National Air Monitoring Station (NAMS) networks that have existed for several years. The final network plan must be submitted to EPA by July 1, 2009 and the stations must be operational by January 1, 2011.

The NCore Network is intended to address the following monitoring objectives:

- Timely reporting of data to the public through AIRNow, air quality forecasting, and other public reporting mechanisms
- Support the development of emission strategies through air quality model evaluation and other observational methods
- Accountability of emission strategy progress through tracking long-term trends of criteria and non-criteria pollutant and precursor concentrations
- Support long-term health assessments that contribute to ongoing reviews of the National Ambient Air Quality Standards (NAAQS)
- Compliance through determination of nonattainment/attainment areas through comparison with the NAAQS
- Support multiple disciplines of scientific research, including; public health, atmospheric and ecological

| Parameter | Required ¹ | Comments | Planned |
|--|-----------------------|---|--------------|
| FRM PM _{2.5} mass | X | 24 hr. average no less than every 3rd day | X |
| continuous PM _{2.5} mass | X | 1 hour reporting interval | X |
| Speciated PM _{2.5} | X | Organic and elemental carbon, major ions and trace metals (STN protocol-24 hour average; every 3rd day) | X |
| PM _{10-2.5} FRM mass | X | 1 hour reporting interval | X |
| Speciated PM _{10-2.5} | X | method not determined | ² |
| Ozone (O ₃) | X | FEM | X |
| Sulfur dioxide (SO ₂) | X | Capable of trace levels (low ppb and below) | X |
| Carbon monoxide (CO) | X | Capable of trace levels (low ppm and below) | X |
| Nitrogen oxide (NO) | X | Capable of trace levels (low ppb and below) | X |
| Total reactive nitrogen (NO _x) | X | Capable of trace levels (low ppb and below) | X |
| Surface meteorology | X | Wind speed and direction, temperature, RH | X |
| PM10 mass | | 1 hour reporting interval | X |
| PAH | | NAATS protocol | X |
| Precipitation | | 1 hour reporting interval | X |
| Precipitation chemistry | | Weekly sample | X |
| | | | |
| | | ¹ Pt 58 Appendix D 3(b) ² method and implementation not yet determined | |

EPA has provided some funding to the Department of Health and Environmental Control (SC DHEC), Division of Air Quality Analysis to begin the process of acquiring necessary equipment and establishing an NCore station in South Carolina. After evaluation of the existing network, historical data, census data, meteorology, and topography, the SC Department of Health and Environmental Control recommends the following changes to its air monitoring network to become effective January 1, 2011.

Recommended changes to Ambient Air Monitoring Network to accommodate NCore sampling strategy:

The relocation of parameters listed below is based on available funding at the time of implementation of the NCore site. The reallocation of resources is subject to change based on available funding for additional NCore parameters.

- 1) Establish an NCore multi-pollutant monitoring station at the existing Parklane Site (AQS #45-079-0007). The location meets the objective for an NCore site and meets scale criteria for the required NCore monitoring and indicated in Table 2
- 2) Move trace level carbon monoxide monitoring from Cape Romain (45-019-0046) to Parklane. The monitoring at Cape Romain was established in 1993, primarily to support investigations of pollutant impact on the Cape Romain National Wildlife Refuge and analysis of visibility related data. The site also supports particulate mass and speciation sampling (IMPROVE) and mercury deposition measurements (NADP Mercury Deposition Network – SC05).

The NAAQS for carbon monoxide is 35 ppm for the 1-hour standard and 9 ppm for the 8-hour standard. Measured values at Cape Romain have not violated either standard. The Design Values for the most current complete year for Cape Romain and the monitoring location closest to the Parklane site are below.

| Carbon Monoxide Design Value | | Year | Max 1 Hour | | Maximum 8 Hr | |
|------------------------------|-------------|------|------------|-----|--------------|-----|
| | | | 1st | 2nd | 1st | 2nd |
| Cape Romain | 45-019-0046 | 2008 | 0.9 | 0.8 | 0.5 | 0.5 |
| State Hospital | 45-079-0020 | 2007 | 3.1 | 2.9 | 2.5 | 1.6 |

- 3) Establish sulfur and nitrogen oxides monitoring at Parklane using trace level monitors. SO₂ and NO_x monitoring was discontinued at the site at the end of 2007.

Previous measurements at the site did not indicate concentrations above the NO₂ or SO₂ standards. The most recent complete year summary information is listed below. NO_y measurements are planned, but on-site comparison of NO_y and NO_x measurements may be made prior to final implementation to determine the most appropriate and cost effective parameter for the area.

| Parklane NAAQS (ppm) | | Annual Average SO ₂ -.03 NO ₂ -.053 | Max 1 Hour | | Maximum 3 Hr SO ₂ - 0.494 | | Maximum 24 Hr SO ₂ - 0.139 | |
|-------------------------|------|--|------------|-------|---|-------|--|-------|
| | Year | | 1st | 2nd | 1st | 2nd | 1st | 2nd |
| SO ₂ | 2007 | 0.002 | 0.051 | 0.030 | 0.021 | 0.015 | 0.051 | 0.030 |
| NO _x | 2007 | 0.011 | 0.057 | 0.054 | - | - | - | - |

- 4) Move the STN PM_{2.5} speciation sampler from the Charleston CPW site (45-019-0049) to Parklane. Although the CPW site is currently part of the Speciation Trends Network there is a nearby IMPROVE site (Cape Romain: 45-019-0046) that provides coastal fine particulate speciation data. There is a considerable record from concurrent collection at the two sites to allow comparison between the locations. The CPW site PM_{2.5} mass design values are well below the NAAQS.

There are insufficient resources available to support an additional 1:3 STN protocol site in the network.

- 5) Reinstall FRM PM_{2.5} sampling at Parklane. There is a continuous record of FRM measurements at Parklane for 1999 through 2008. The most recent PM_{2.5} design values at the proposed NCore and the other Columbia area sites are below.

| PM _{2.5} Design Value | | | | |
|--------------------------------|-------------|--------|--------|---------|
| | | Year | Annual | 24 Hour |
| Parklane | 45-079-0046 | 06-08 | 13.1 | 27 |
| Sandhill | 45-079-1001 | (2007) | (11.8) | (22.1) |
| Irmo | 45-063-0008 | 06-08 | 13.7 | 28 |
| Bates | 45-079-0019 | 06-08 | 13.3 | 28 |
| | | | | |

- 6) Reinstall 10M tower and equipment for measurement of Wind Speed and Direction

Monitoring Objectives:

Determine compliance with NAAQS; observe pollution trends for national data analysis, provide pollution levels for daily index reporting; and provide data for scientific studies.

Quality Assurance Status:

All Quality Assurance procedures shall be implemented in accordance with 40 CFR 58, Appendix A. The Department's current Quality Assurance Project Plans include PM, Ozone, CO, NO_x, SO₂, Speciation, and meteorological measurements and accommodates the use, quality assurance and reporting of trace level criteria pollutant measurements. The Ambient Air Quality Monitoring Quality Assurance Project Plan and Appendices (Instrument Standard Operating Procedures) will be revised as necessary to accommodate any NCore specific changes or additions to procedure.

Table 1 Monitoring Methods:

| Monitor Type | Designation | Analysis Method | Frequency of Sampling |
|--|-------------|--|-----------------------|
| Carbon Monoxide (CO) | NCore | Automated Reference Method utilizing trace level non-dispersive infrared analysis. | Continuously |
| Ozone (O ₃) | NCore/AQI | Automated Equivalent Method utilizing UV photometry analysis. | Continuously |
| Sulfur Dioxide (SO ₂) | NCore | Automated Equivalent Method utilizing trace level UV fluorescence analysis | Continuously |
| Total Reactive Nitrogen (NO _x) | NCore | Automated trace level chemiluminescence analysis. | Continuously |
| FRM PM _{2.5} | NCore | Manual Reference Method utilizing gravimetric analysis. | 1:3 days |
| PM _{2.5} TEOM | NCore/AQI | Automated Equivalent Method* utilizing Tapered Element Oscillating Microbalance/gravimetric analysis | Continuously |
| PM _{coarse} | NCore | Automated Equivalent Method* utilizing Tapered Element Oscillating Microbalance/gravimetric analysis | Continuously |
| PM _{2.5} Speciation | NCore | Multi-species manual collection method utilizing thermal optical, ion | 1:3 days |

| | | | |
|-------------------------|-------|--|--------------------|
| | | chromatography, gravimetric, and X-ray fluorescence analyses. | |
| Meteorological | NCore | Air quality measurements approved instrumentation for wind speed, wind direction, humidity, barometric pressure temperature, and precipitation | Continuously |
| SVOC | SPM | High volume PUF/XAD sampler and GCMS analysis. (NAATS protocol) | 1:6 |
| Precipitation Chemistry | SPM | Weekly event collection and IC analysis | Weekly (Tues-Tues) |

* FEM designation pending

Area of Representativeness:

40 CFR Part 58 Appendix D provides design criteria for ambient air monitoring network design. The monitoring objective for the NCore site is to produce data that represents a fairly large area and therefore the spatial scale of the site is important. The spatial scale defines the physical dimensions of the air parcel nearest to a monitoring site throughout which actual pollutant concentrations are reasonably similar. It is determined by the characteristics of the area surrounding the air monitoring site and the site's distance from nearby air pollution sources such as roadways, factories, etc. In the case of urban NCore, the spatial scales to be used are neighborhood and urban. Table 2 shows the expected area of representativeness for each pollutant for the Parklane site. The scale determination may be confirmed by comparison other local monitoring data.

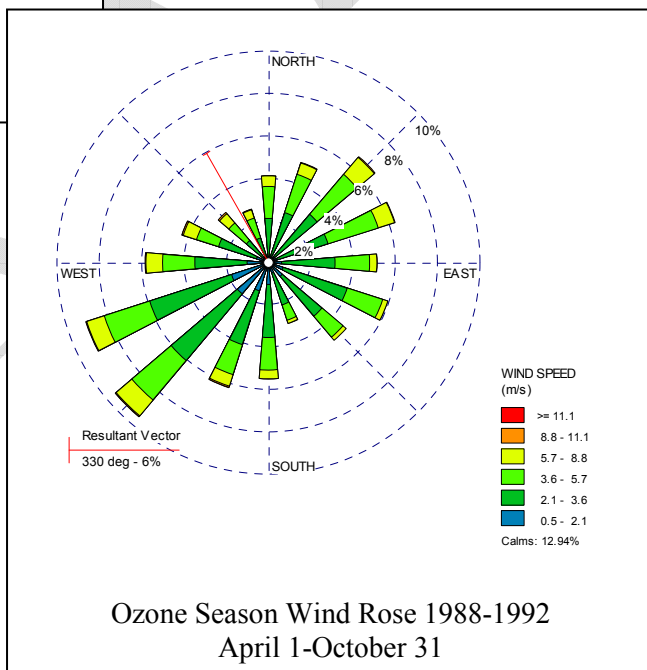
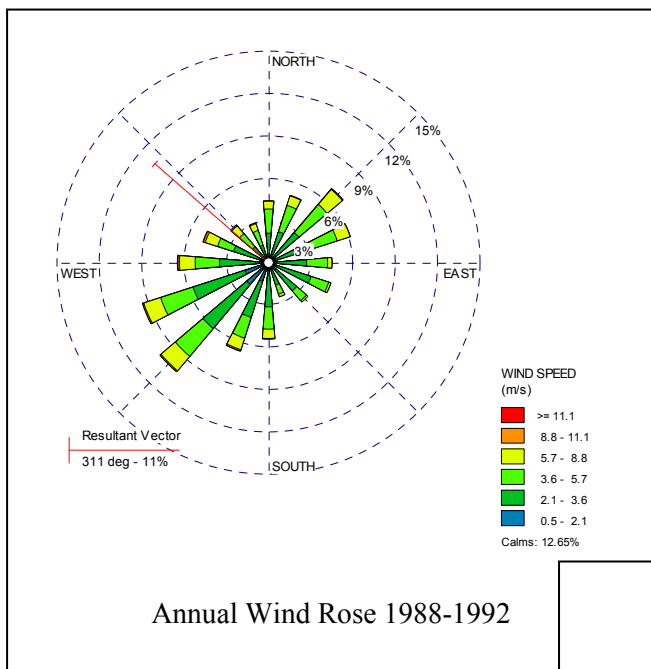
Table 2: Spatial Scales for Each Pollutant

| Pollutant | Spatial Scale | Comments |
|-----------------|------------------------------|--------------------------------|
| Ozone | Neighborhood and Urban Scale | |
| NO _x | Neighborhood and Urban Scale | |
| Carbon Monoxide | Neighborhood Scale | There is no Urban scale for CO |
| SO ₂ | Neighborhood and Urban Scale | |
| PM | Neighborhood and Urban Scale | |

For neighborhood scale the area covered is an area with dimensions of up to 4 km around the air monitoring site. The area around the proposed site has a mix of residential and commercial uses and is representative of most areas in Richland and Lexington Counties at the edge of the core urbanized area. The area within 4 km includes seven schools, one hospital, 1 park and 1 large shopping venue.

Urban scale is an area with dimensions of 4 km up to 50 km. 50 km would incorporate much of the MSA. There are several sites existing sites in the area whose data may be used to confirm the scale of the particulate monitoring.

The proposed NCore site is located northeast of the Columbia urban center and along the axis of the most recent area growth. The wind roses indicate the prevailing wind directions throughout the year and during the ozone season (April 1-October 31) are southwest to northeast. The placement of the NCore site northeast of the urban core is an appropriate location for measuring impact and potential secondary pollutant formation originating in the urban center and the population exposure along the axis of dominant winds and the current and expected growth.



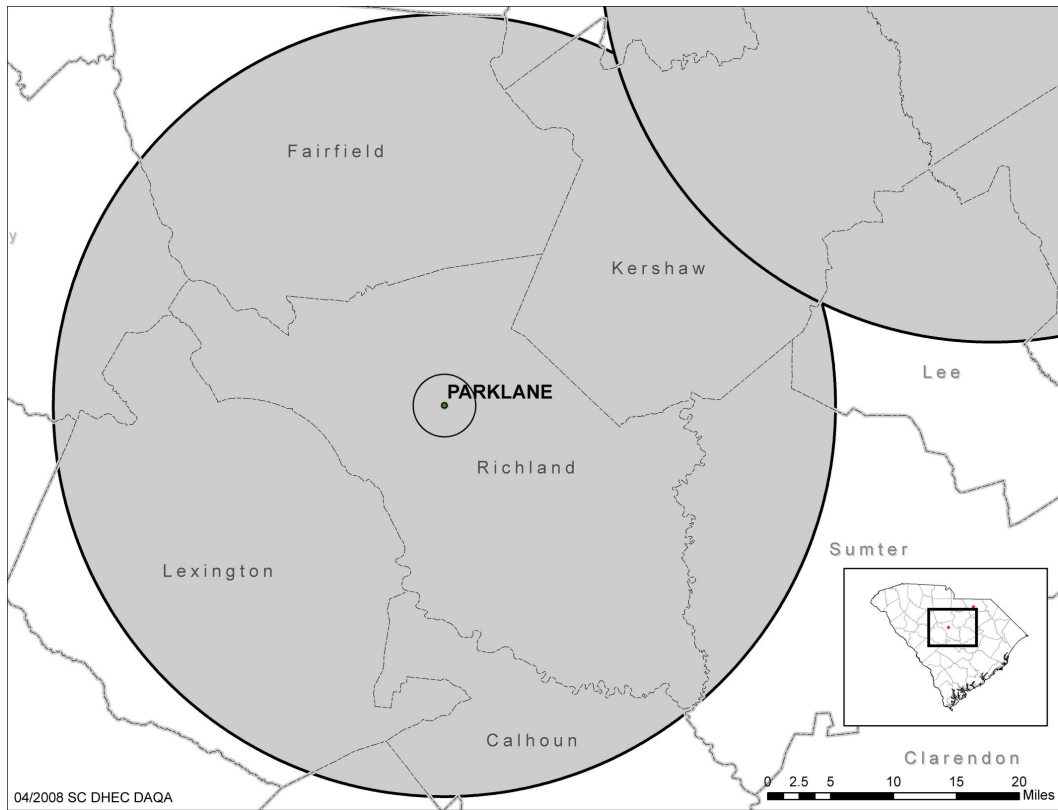


Figure 1 Urban and Neighborhood Scale

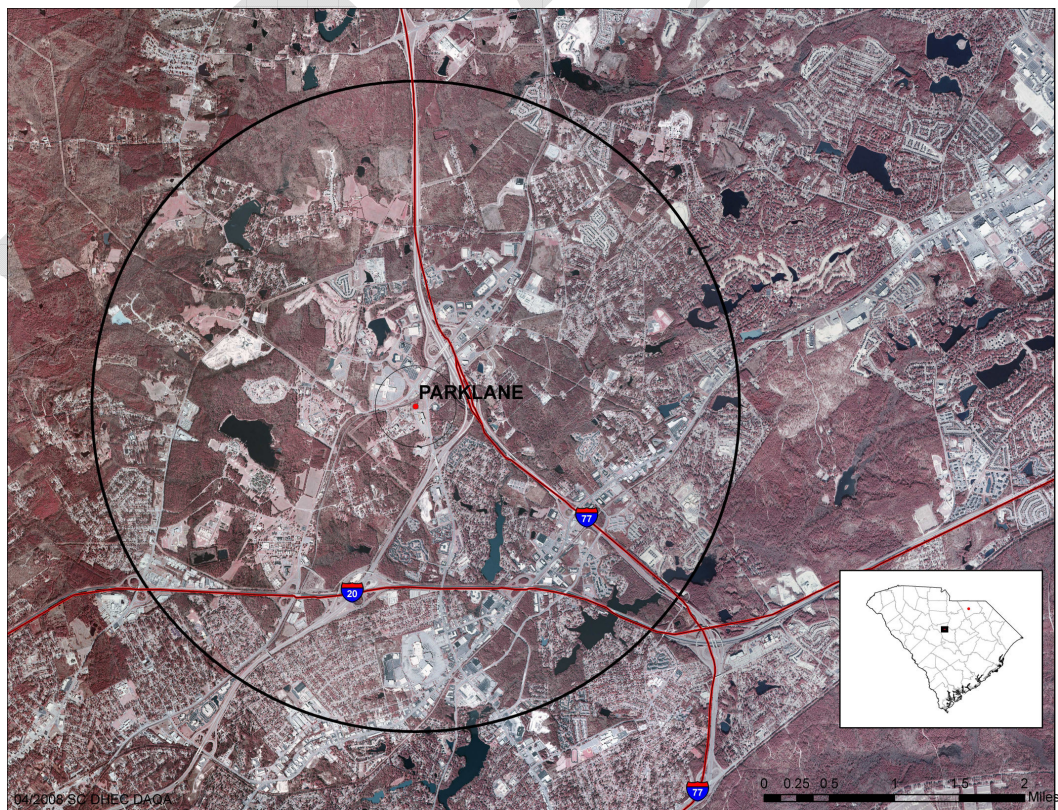


Figure 2 Neighborhood and Middle Scale



Figure 3 Middle and Micro Scale



Figure 4 Micro Scale

Site Description and Spacing:

NCore and PM_{2.5} SLAMS Siting Criteria

Appendix E to 40 CFR Part 58-*Probe and Monitoring Path Siting Criteria for Ambient Air Quality Monitoring* contains specific location criteria applicable to NCore and SLAMS siting. The following measurements and data were obtained for evaluation of compliance with the criteria.

1. **Horizontal Placement of Sampling Probes:**

The gaseous instruments will be placed in a 8'w x 16' l x 8'h air monitoring shelter located approximately 100 meters north of the Archives and History facility with the sample probe inlets being approximately 4.1 meters above the ground. A 10 meter telescoping tower will be placed on the northeast side of the shelter to allow for extension of the NO_y monitor sampling inlet to up to 10 meters AGL.

The manual particulate samplers will be placed on wooden decks adjacent to the sampling shelter. The height of the inlets of the particulate samplers will vary between 2-4 meters depending on the stand used. The inlets for the continuous particulate samplers will be above the air monitoring shelter with the sample inlets being approximately 1.5 meters above the roof surface (~4 meters above ground). The control units will be located inside the temperature controlled shelter.

2. **Spacing from Obstructions:**

There are no obstructions to clear flow at the proposed location.

3. **Spacing from Roadways:**

Tables E-1, E-2, and Figure E-1 of 40 CFR Part 58 Appendix E list the minimum distances from roadways a monitoring probe needs to be based on the average daily traffic (ADT) counts. Table 3 summarizes the findings and includes the minimum separation distance from roadways for each pollutant. ADT counts were obtained from a traffic count collected by the South Carolina Department of Transportation.

Table 3: Spacing from Roadways

| Roadway | ADT | | Distance from site (meters) | Minimum Distance Required (meters) | | | |
|------------------------|------------------|----|-----------------------------|------------------------------------|---------------------------------|-----------------|------------------|
| | | | | Ozone Table E-1 | NO/NO _y Table E-1 | CO Table E-2 | PM Figure E-1 |
| Counts Road | <100 (estimated) | SW | 105 | 10 | 10 | 10 | 15 |
| Farrow Road | 23,800 (2005) | NW | 150 | 43 | 34 | 58 | 22 |
| Parklane Road (S-1036) | 13,600 (2005) | E | 135 | 27 | 17 | 21 | 15 |
| 277 | 56,700 (2005) | NE | 600 | 82 | 78 | 148 | 52 |
| I-20 | 76,600 (2005) | S | 2200 | 125 | 125 | 150 | 72 |

4. **Spacing from Minor Sources:**

The closest potential sources to the site are the 2.1 x 106 BTU/hr natural gas fired steam boiler and an emergency generator associated with the Archives and History Center. The units are located

approximately 90 and 69 meters, respectively, south southwest of the site shelter.





Site Details:

The Parklane site is situated on an earthen platform constructed to improve exposure of the site when it was moved from the original location within the footprint of the current South Carolina Archives and History building (1997). The platform raised the site area between 3 and 6 feet above the original ground level. The flat top of the platform is approximately 50' by 50'.

The picture above was taken looking toward the North and shows the existing building and sampling platforms. The building stand is 2.6M AGL and 10' w x 12' l. The ground level stand is ~1.1M AGL and is 8' x 8'. The continuous monitor manifold inlet is 4.1 meters above the ground. The platform will support the PM_{2.5} FRM, PM_{2.5} Speciation, and URG Carbon. It also has room for the PEP audit equipment. Electrical service to the complex is 200 amps, with 15 and 20 amp GFCI outlets strategically placed on the platforms to provide power to the samplers. The ground level stand, approximately 12 meters west of the building, can accommodate any necessary high volume sampling and will be available for additional sampling associated with special studies.

The shelter is a 10' w x 16' l x 8' h portable building. The roof of the shelter has railings installed and can be available for special sampling, but use is avoided to prevent compromising the weatherproof integrity of the shelter. A base and wiring for the 10 meter meteorological tower is in place ~10 M from the building at the NE corner of the site. The telescoping tower to support the NO_y converter is expected to be placed on the north side of the building to allow the converter assembly to be kept vertical and to ease servicing and calibration. The shelter is currently wired for one telephone line. The shelter has heating and cooling equipment adequate to maintain internal temperatures between 20-30 °C.

The site is on State owned property that is part of the larger State Park complex. Long term use of the site is not expected to be an issue.



The picture above provides a view of the site area from Parklane Road looking West.

| Direction | Description | Distance from Site (Meters) |
|-----------|-------------------------------------|--------------------------------|
| North | Railroad, Convenience market | 87 / 130 |
| Northeast | Parklane Road | 163 |
| East | Parklane Road | 138 |
| Southeast | SC Archives and History Building | 114 |
| South | SC Archives and History parking lot | 71 |
| Southwest | Emergency trailer storage | 146 |
| West | Emergency Response vehicle storage | 152 |
| Northwest | Railroad, Farrow Road | 88 /151 |

Network Description and Ambient Monitoring Plan description of proposed NCore site Parklane

Air Quality Control Region: Columbia (200)

CSA/MSA: Columbia-Newberry CSA / Columbia MSA

AQS Site ID: 45-079-0007

Location: 8311 Parklane Rd.

County: Richland

Coordinates: +34.093959, -80.962304

Date Established: 04/03/1980

Site Evaluation: The most recent site evaluation was conducted on 03/22/2007.



The Parklane site is located in north central Richland County. Parklane represents neighborhood and larger scale concentrations. The site is in a suburban setting dominated by area sources. The Parklane site has samplers for acid rain and has continuous monitoring for ozone and precipitation. Additionally, the site has a sampler for semi-volatile compounds. The sample inlets are 57.0 meters from the nearest road.

The site was originally placed to represent downwind, edge of the Columbia urban area population exposure measurements.

Since it was established, commercial and residential areas have spread further to the northeast. The site also provides a facility for training and equipment evaluation convenient to the Columbia DHEC air laboratory.